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Finding the Capacity of Section from Fundamental Diagrams of Heterogeneous Traffic Stream

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Abstract: In the present day scenario almost all the road traffic consists of mixed traffic, i.e. the combination of both Non-Motorized and Motorized traffic. The mixed traffic affects the characteristics of the traffic stream to great extent. Non-Motorized Vehicles are the vehicles which will run with the power of human beings or animals. The non-motorized vehicles include bicycles, rickshaws, and hand drawn vehicles, pull carts and so forth. Motorized vehicles are those vehicles which run with the power of the engines. The motorized vehicles are divided into light motorized vehicles and heavy motorized vehicles. Light motorized vehicles consist of auto rickshaws, jeeps, taxis, motorcars, three-wheeler conveyance vans and so forth. Motorcycles do not come under this category. Heavy motorized vehicles consists of vehicles with number of wheels more than six. This Heavy Motorized Vehicles consists of Buses, Lorries and Trucks etc. The presence of non-motorized vehicles affects the capacity of the section. With the increase in the Non-Motorized vehicle capacity, the total capacity of the section will be reduced, affects the safety of the total stream and the declining of energy resources (petrol, diesel etc.). In order to minimize the consequences vehicles like in U.S.A. or else proper study should be made on the Non-Motorized vehicles and its effects on the traffic stream

Index Terms: Non-Motorized, Motorized, Capacity, Speed-flow-Density, traffic stream.

1. INTRODUCTION:

In the present day scenario almost all the road traffic consists of mixed traffic, i.e. the combination of both Non-Motorized and Motorized traffic. The mixed traffic affects the characteristics of the traffic stream to a great extent. Non-Motorized Vehicles are the vehicles which will run with the power of human beings or animals. The non-motorized vehicle includes bicycles, rickshaws, and hand drawn vehicles, pull carts and so forth. Motorized vehicles are those vehicles which run with the power of the engines. The motorized vehicles are divided into light motorized vehicles and heavy motorized vehicles. Light motorized vehicles consist of auto rickshaws, jeeps, taxis, motorcars, three-wheeler conveyance vans and so forth. Motorcycles do not come under this category. Heavy motorized vehicles consists of vehicles with number of wheels more than six. This Heavy Motorized Vehicles consists of Buses, Lorries and Trucks etc.

As per the World Bank survey about 50 percent of the non-motorized vehicles are present in the south Asian nations like India, Bangladesh. In Bangladesh, the maximum number of trips generated during peak hours is due to non-motorized vehicles like bicycles, rickshaws. The presence of non-motorized vehicles affects the capacity of the section. With the increase in the Non-Motorized vehicle capacity, the total capacity of the section will be reduced, affects the safety of the total stream and the declining of energy resources (petrol, diesel etc.). In order to minimize the consequences vehicles like in U.S.A. or else proper study should be made on the Non-Motorized vehicles and its effects on the traffic stream. In India practically it is not possible to lay a separate track for Non-Motorized vehicles, so proper study has to be conducted on Non-Motorized Vehicles and its characteristics along the mixed stream. Hence Non-Motorized vehicular movement and its effects on traffic characteristics are taken into account in the project.

2. OBJECTIVE:

The objective of the work is to find traffic characteristics of Non-Motorized vehicles in mixed stream and its effect on traffic stream.

3. EXPERIMENTAL PART:

The experimental part consists of the following objectives

- To study the fundamental diagrams of traffic flow obtained from various locations
- To find the capacity of the sections from fundamental diagrams

The experimental part comprises of data collection, data extraction and results of the collected data.

DATA COLLECTION:

The data collection consists of video coverage of the data from various locations. The project primarily aims in and around Rourkela city. The data is collected from five different locations in Rourkela. The locations are selected such that they have different traffic conditions and different roadway patterns. The five locations are enlisted below

- Road at Ambagan Chowk, Rourkela.
- Road near Bisra Chowk, Rourkela.
- Road near Daily Market, Rourkela.
- Road near Konark Theatre, Rourkela.
- Road from Sector 2 to NIT, Rourkela.

The sections should contain high traffic volume, minimum number of turning vehicles, no parking zones. The surface of the road should be even and level terrain. The section should not contain bus stops. The data are collected for a minimum of 30 minutes in each section with the help of a high resolution video camera. The camera is placed at one corner of the section so that the entire section is

STUDIES ON MECHANICAL PROPERTIES IN CONCRETE USING POLYPROPYLENE & G.I CRIMPED FIBRE

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Abstract : The concrete which has fibrous materials in it are called fibre reinforced concrete. The structural integrity increases. Fibres which are short discrete are distributed uniformly. The orientations of these fibres are random. There are many fibres such as synthetic fibres, natural fibres, steel fibres, glass fibres. The properties of these fibres vary within the concrete. It is seen that the characteristics of their fibre reinforced concrete changes with the change in concrete, its orientation and geometries. Crack occurs in the concrete due to plastic shrinkage. Fibres are added in concrete to avoid these cracking. It is wrong notation that fibres increase the strength of concrete. Sometimes opposite may happen. The permeability of the concrete is reduced and finally reducing the bleeding of the water. Steel fibres can improve the structural strength to reduce in the steel reinforcement requirement. Freeze thaw resistance of concrete is improved. Durability of the concrete is improved to reduce in the crack widths. Polypropylene fibres are used to improve the impact resistance. Many developments have been made in the fibre reinforced concrete. By replacing the fibres in concrete we are finding the compressive strength and split tensile strength of concrete.

Keywords - **Polypropylene Fibre, Galvanized Iron Crimped Fibre, Compressive strength, Split Tensile strength.**

I. INTRODUCTION

Fibres act like discrete reinforcement, which provide tensile stress transfer across a crack. Fibres bridging a crack increase the load carrying capacity of the material even after the formation of a crack. A concrete beam containing fibres suffers damage by gradual development of single or multiple cracks with increasing deflection, but retains some degree of structural integrity and post-crack resistance even under considerable deflection. A similar beam without fibres fails suddenly at a small deflection by separation into two pieces. The addition of the fibres to concrete therefore enhances the toughness of concrete. The ability of fibre-reinforced concrete composites to absorb energy has long been recognised as one of the most important benefits of the incorporation of fibres in plain concrete. The toughening effect is the result of crack closing stresses provided by the fibres results from several types of fibre/matrix interactions, leading to energy absorption in the fibre-bridging zone of a fibre-reinforced concrete (FRC). These processes include fibre bridging, fibre debonding, fibre pullout (sliding) and fibre rupture as a crack propagates across a fibre through the matrix.

There are many kinds of fibres, both metallic and polymeric, which have been used in concrete to improve specific engineering properties of the material. Steel fibres are used in a wide range of structural applications, in general, when the control of concrete cracking is important such as industrial pavements precast structural elements and tunnel linings. Steel fibres have high elastic modulus and stiffness and produce improvements in compressive strength and toughness of concrete. Improvements in flexural strength of the material are also obtained by the use of steel fibres in concrete. Increase in flexural strength is achieved with increasing fibre aspect ratio (length to diameter ratio) and fibre volume fraction; significant improvements are obtained at high volume fractions. In general, addition of steel fibres influences the compressive strain at ultimate load and ductility in flexure more significantly than the improvements in strength.

Steel fibres, however, increase structure weight of concrete and exhibit balling effect during mixing, which lowers the workability of the mix. In addition, steel fibres easily basset and rust, and it also has the problem of conductive electric and magnetic fields.

Synthetic fibres are less stiff than steel fibres and are most typically used in industrial pavements to reduce the cracking induced by shrinkage. Synthetic fibres are mainly effective in reducing crack formation, particularly at an early stage of the cast and in severe weather conditions (e.g. in dry climatic zones), when hygrometric shrinkage brings along some weak tensile stress which is yet too high for the fresh mixture to withstand. Synthetic fibres made using nylon Polypropylene and acrylic are available commercially. Polypropylene fibres are available in two different forms; Monofilaments and Fibrillated. Monofilament fibres are single strand of fibres having uniform cross-sectional. Fibrillated fibres are manufactured in the form of films or tapes that are slit in such a way that they have net like physical structure. Polypropylene fibres have good ductility, fineness, and dispersion so they can restrain the plastic cracks. Improvements are being made to optimize synthetic fibres to suit structural applications. Recently, macro-synthetic fibres have been produced with the aim of substituting steel fibres in structural applications. There has been a growing interest on synthetic fibres, owing to some substantial advantages over metallic ones, such as strong chemical stability in alkaline and generally aggressive environments, exemption from oxidation, lightness and, in turn, convenient stocking and handling, n-toxicity and electromagnetic transparency. This latter aspect is relevant, for instance, when either dealing with special equipment (ranging from mobile phones to CT diagnostics) or in

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STUDIES ON MECHANICAL PROPERTIES IN CONCRETE USING POLYPROPYLENE & G.I CRIMPED FIBRE

Authors

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Keywords

Polypropylene Fibre, Galavanized Iron Crimped Fibre, Compressive strength, Split Tensile strength.

Abstract

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AN EXPERIMENTAL INVESTIGATION ON PROPERTIES OF FIBER REINFORCED CONCRETE

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Abstract: During service, when concrete starts taking the load. Compression and tension stresses are developed in concrete. Since the concrete is brittle in nature, Tensile strength of the concrete is lesser and so reinforcement provided start functioning after cracking in concrete. Use of fiber reinforced concrete had proven improved impact on tensile strength of concrete and the active reinforcement role initiate after concrete cracking starts. We are using steel fibre reinforcement in concrete enhances the ability of beams to carry significant stresses and increases the toughness of concrete under any type of load. The basis of the project is to find the tensile, compressive and flexural strength of beams. The steel fiber was used in three different proportions 0.5%, and 1% by volume. It has been carried out full-scale tests of one reference of plain concrete beam and three beams with fiber reinforcement concrete. The test results show that the steel fiber reinforced concrete proved that to have better capacity than the plain concrete beams. This indicates that steel fiber reinforced concrete is a good solution for shear reinforcement for beams.

Index Terms **- Fiber Reinforced Concrete, Shear Reinforcement, Tensile, Compressive and Flexural strength.**

1. INTRODUCTION:

Concrete is significantly more brittle and exhibits a poor tensile strength. Based on fracture toughness values, steel is at least 100 times more resistant to crack growth than concrete. Concrete in service thus cracks easily and this cracking creates easy access routes for deleterious agents resulting in early saturation, freeze-thaw damage, scaling, discoloration and steel corrosion.
The concerns with the inferior fracture toughness of concrete are alleviated to a large extent by reinforcing it with fibers of various materials. The resulting material with a random distribution of short, discontinuous fibers is termed fiber reinforced concrete (FRC) and is slowly becoming a well accepted mainstream construction material. Significant progress has been made in the last thirty years towards understanding the short and long-term performances of fiber reinforced cementitious materials, and this has resulted in a number of novel and innovative applications.

Concrete is one of the most versatile building materials. It can be cast to fit any structural shape from a cylindrical water storage tank to a rectangular beam or column in a high rise building. The advantages of using concrete include high compressive strength, good fire resistance, high water resistance, low maintenance, and long service life.
The disadvantages of fusing concrete include poor tensile strength, low strain of fracture and formwork requirement. The major disadvantage is that concrete develops micro cracks during curing. It is the rapid propagation of these micro cracks under applied stress that is responsible for the low tensile strength of the material. Hence fibres are added to concrete to overcome these disadvantages. The addition of fibres in the matrix has many important effects. Most notable among the improved mechanical characteristics of Fibre Reinforced Concrete (FRC) are its superior fracture strength, toughness, impact resistance, flexural strength resistance to fatigue, improving fatigue performance is one of the primary reasons for the extensive use of Steel Fibre Reinforced Concrete (SFRC) in pavements, bridge decks, offshore structures and machine foundation ;where the composite is subjected to cyclically varying load during its lifetime.

The main reasons for adding steel fibres to concrete matrix is to improve the post cracking response of the concrete, i.e., to improve its energy absorption capacity and apparent ductility and to provide crack resistance and crack control. Also, it helps to maintain structural integrity and cohesiveness in the material. The initial researches combined with the large volume of follow up research have led to the development of a wide variety of material formulations that fit the definition of Fibre Reinforced Concrete. Steel fibre's tensile strength, modulus of elasticity, stiffness modulus and mechanical deformations provide an excellent means of internal mechanical interlock. This provides a user friendly product with increased ductility that can be used in applications of high impact and fatigue loading without the fear of brittle concrete failure. Thus, SFRC exhibits better performance not only under static and quasi-statically applied loads but also under fatigue, impact, and impulsive loading.

2. FIBRE REINFORCED CONCRETE (FRC):

Fibre reinforced concrete (FRC) is a concrete composite of cement, fine and coarse aggregate and fibres with different proportions. In plain concrete, micro cracks develop even before loading, particularly due to drying, shrinkage or other causes of volume change. The width of these initial cracks seldom exceeds few microns. When loaded, the micro cracks propagate and open up due to the effect of stress concentration additional cracks form in place of minor defects. The structural cracks proceed slowly in the matrix and the development of such micro cracks is the main cause of inelastic deformation in concrete. Normally, water passes through concrete by way of unwanted cracks and voids that develop during the early stages. Fibres enable concrete to progress from plastic state to hardened state without weakness. This is achieved by the reduction of micro crack formation, reduced segregation and decreasing the scope of capillary formation, thus reducing permeability. Generally, fibres are chosen depending upon the aspect ratio. Aspect ratio is defined as length to diameter of the fibre.

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Computation of Groundwater Draft for Handri River Basin in Andhra Pradesh, India

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Abstract
In India assessment of groundwater is based on guidelines of Groundwater Estimation Committee which is formed by government of India. Groundwater assessment involves groundwater draft. For computation of groundwater draft various data is required. Data includes area, canal particulars, well particulars, depth to water level bgl (m), water bodies, area irrigated under groundwater under surface water, recharge. For computation of groundwater draft Groundwater Estimation Committee methodology is used in the present study. The study area considered for assessment of groundwater resources is Handri river basin, a tributary of Tungabadra river in Kurnool district of Andhra Pradesh. In this paper draft is computed for monsoon and nonmosoon seasons and considered commanded area only. draft computed for watersheds which are fall in river basin for commanded area only. Different mathematical models are used for computation of draft. Data is collected from various departments namely Central Ground Water Board, Agriculture department, Panchayat raj Department.

Keywords
Groundwater, Assessment, Recharge, Draft, River

Introduction

Present methodology is based on recommendations of Groundwater Estimation Committee which is formed by government of India. In the present study only gross groundwater draft is estimated. For computation of gross groundwater draft various data is required. Data includes village data, canal particulars, well particulars, depth to water level bgl (m), water bodies, area irrigated with groundwater and surface water, recharge. Gross groundwater draft is computed for various factors such as gross groundwater draft for irrigation, annual gross groundwater draft for irrigation, annual gross groundwater draft for all uses, gross groundwater draft for all uses during monsoon season, current annual gross groundwater draft for irrigation per unit area, current annual gross groundwater draft for all uses per unit area. [5] This groundwater draft is used for recharge calculations by different methods such as Water Table Fluctuation Method and Rainfall Infiltration Factor method which is recommended by Groundwater Estimation Committee. This groundwater draft may be computed for command area, non-command area and poor groundwater quality area for both monsoon season and non-monsoon season. [6]

Study Area

The study area considered for computation of groundwater draft is Handri river basin, a tributary of Tungabadra river in India (Fig. 1). The origin is between Pattikonda and Aspari and mingle in river Tungabhadra which is one of the major tributary of river Krishna. In this paper only commanded area of 4 watersheds are considered.

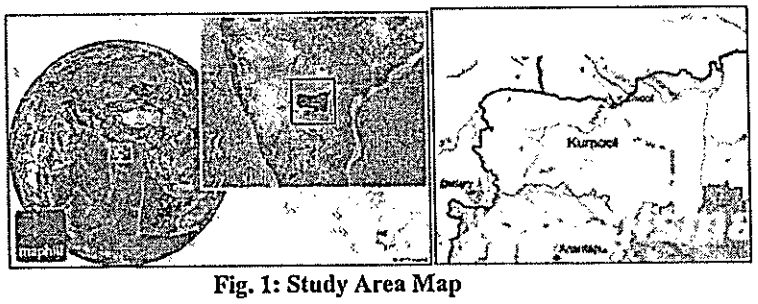

Fig. 1: Study Area Map

Data Used

Village data which contains general details such as area, forest area, hilly area and population for command and non-command areas, groundwater quality, water-logged and shallow water table area and average deep tube wells in the area (should be less than 5m), flood prone area and number of days in a year which water retained in flood prone area.

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Geopolymer Brick by using Flyash, GGBS, Silica Fume and Kadapa Slab Dust

N. R. Gowthami, A. Sivaji, K. Ajay Kumar Reddy

ABSTRACT: Brick is the former construction material, a standard-sized non load bearing building component. The ancient bricks manufactured by clay, earth or mud. By 2007 the new 'fly-ash' brick made up of cement and flyash which is reliable, weather & acid resistant. The cement is a hugely used building material and liberates CO2 leading to pollution. To minimize pollution and a step to advancement in sustainable development. The current research results to geo polymer brick, where the cement is replaced with GGBS, silica fume and Kadapa slab dust. For bonding, polymers were used with limited water content. Hence produced brick is a hybrid geo polymer brick with multi material combination. Fly ash 75%- GGBS 25% as a base material. GGBS is partially replaced with silica fume and Kadapa slab dust by 2 to 5%. Evaluated through compressive strength results in which we found three optimum proportions such as FA 75%-GGBS22%-SF3% & 75% FA-22% GGBS -3% KSP.

Index Terms: Flyash (FA), Ground granulated blast furnace slag (GGBS), Silica fume (SF)

I. INTRODUCTION

A brick is a building material, used to construct walls, pavements and other elements. Traditionally, A brick is composition of clayey soil, fine aggregate, and lime(calcium carbonate). Bricks are classified in to various types based on geometry and composition of materials which vary with region. Initially in 7000 BC sun-dried mud bricks were introduced, later kiln-dried clay bricks are introduced which are more weather-resistant.

Dr. Bhanumathidas and Kalidas in 1991 has developed and got petent on Flyash, Lime &Gypsum for achieving high early strength due to the conversion of calcium aluminates into calcium alumino sulphates. Leads to reduction in cost by 20%. Even though in the present scenario, a well known fact that cement is universal constructional material made of clay & lime stone a naural resource, because of its continuous usage soon they may exhaust. In order to protect the natural resource and to reduce pollution as an alternate material for sustainable development Geo-polymers-NACL & NAOH is introduced as a binding material. The materials flyash, kadapa slab dust & GGBS are used in the manufacture

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II. LITERATURE REVIEW

Hardjito and Rangan studied fly ash based Geo-polymer Concrete. The material used are fly ash-class F acquired from Thermal power station. Fly ash contains calcium by 2 percent by mass. They observed the compressive strength data and concluded that fly ash based geo-polymer concrete has good strength, fit for structural application. **Davidovit's** the poly condensation of geo-polymer occurs at lower temperatures less than 100°C and the chemical reaction involved in their formation. **Hardjito et al.** concluded water to geo-polymer solids ratio has considerable effect on compressive strength of geo-polymer concrete, where as **Fongjan and Ludger** observed that potential properties of geo-polymeric mortar has many key factors like, physical properties, oxide-mole ratios, curing conditions and morphologies of solid materials,. **Rangan et al.** concluded that fly ash geo-polymer concrete has magnificiant resistance to durability properties like creep, shrinkage and chemical attacks. **Hardjito et al.** found that effects of the concoction time and the strength gaining time. **Sumajouw et al.** studied the mechanical properties of geo-polymer concrete columns and beams. **Barbosa et al.** observed the effect of the oxides molar composition and polymerization process- water content. **van Jaarsveld et al.** studied that the properties of geopolymer is affected by water content. **Ranganath and Mohammed** analysed the effect of materials, water content, polymer proprtioning, and the time interval of accelerated curing on the properties of geo-polymer concrete, whereas **Mustafa Al Bakri et al. and Jaukar et al.** analysed the fineness of fly ash leads to increase in workability and compressive strength **Chindaprasirt et al (2007)** found that, to produce a higher strength geo-polymer the optimum sodium silicate to sodium hydroxide ratio was in range of 0.67 to 1.00. Alternatively, the concentration of NaOH between 10M and 20M give small effect on the strength

III. ENGINEERING SIGNIFICANCE

Portland cement emits carbon dioxide majorly leads to global warming. Among the greenhouse gases; carbon dioxide contributes about 65% of global warming also to secure the natural resources. Numerous researches are undergoing to decrease Portland cement utility in bricks and concrete. Leads to utilization of sustainable mineral admixtures like granulated blast furnace slag , fly ash, rice-husk ash, silica fume and Kadapa slab dust, resulting different binders alternative to Portland cement.

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ANALYSIS & DESIGN OF MULTI-STORY BUILDING USING STAAD PRO AND E-TABS

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ABSTRACT:

A multistory building is a building that has multiple stories and typically contains vertical circulation in the form of ramps, stairs and lifts .Multi story building range from 2 stories to more than 150 stories. In this project we analyzed the 5-storey building using STAAD PRO and ETABS. The multistory building is designed using software STAAD PRO and ETABS & manually as per IS 456. The load used in the analysis are dead load (IS875-1987 part1), live load (IS875-1987 part2), wind load (IS875-1987 part3), seismic load (IS1893-1984 part1) and 25 load combinations are considered as per the IS875 (part5)-1987 code book The beams, columns and slabs are designedusing software and by manual procedure, reinforcement details are compared. The foundation is designed by using STAAD Foundation software.

KEYWORDS: Analyzed, designed, Multistory, STAAD PRO, and ETABS.

INTRODUCTION:

Building construction is the engineering deals with the construction of building such as residential houses. In a simple building can be define as an enclose space by walls with roof, food, cloth and the basic needs of human beings. In the early ancient times humans lived in caves, over trees or under trees, to protect themselves from wild animals, rain, sun, etc. as the times passed as humans being started living in huts made of timber branches. The shelters of those old have been developed nowadays into beautiful houses. Rich people live in sophisticated condition houses.Buildings are the important indicator of social progress of the county. Every human has desire to own comfortable homes on an average generally one spends his two-third life times in the houses. The security civic sense of the responsibility, these are the few reasons which are responsible that the person do utmost effort and spend hard earned saving in owning houses.

Nowadays the house building is major work of the social progress of the county. Daily new techniques are being developed for the construction of houses economically, quickly and fulfilling the requirements of the community engineers and architects do the design work, planning and layout, etc., of the buildings. Draughtsman is responsible for doing the drawing works of building as for the direction of engineers and architects. The draughtsman must know his job and should be able to follow the instruction of the engineer and should be able to draw the required drawing of the building, site plans and layout plans etc., as for the requirements.

The design is made using software on structural analysis design (staad-pro). The building subjected to both the vertical loads as well as horizontal loads. The vertical load consists of dead load of structural components such as beams, columns, slabs etc., and live loads. The horizontal load consists of the wind forces thus building is designed for dead load, live load and wind load as per IS 875. The building is designed as two dimensional

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Effect of nanosilica on properties and durability in cement

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Abstract

This research presents the effect of 40 nm size nanosilica (NS) on fresh and hardened properties and durability in different physical and chemical environment in cement. Experimental results indicated that NS in cement mortar has significantly improved compressive and flexural strengths compared to that of cement mortar without NS. The setting process was accelerated due to NS in cement. The durability performance of cement mortar with NS in physical and chemical environment was much better compared to the cement mortar without NS. M5 (90% cement + 10% NS) mix specimens were attributed the best performance in strength and durability compared to cement mortar without NS. The influence of NS in cement on fresh and hardened properties and durability performance in different physical and chemical environment were analysed using Scanning Electron microscope (SEM) and X- ray diffraction (XRD).

Effect of Load Model and Load Level on DG Placement by Crow Search Algorithm

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Emerging Trends in Electrical, Communications, and Information Technologies

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Abstract

Distributed generation is the promising solution for most of the problems faced by Indian radial distribution system like high losses, low end voltages and peak demand. Determining the optimal location and optimal size is one of significant issues in the placement of

A Constant Power Generation of Solar Photo Voltaic Systems using Mppt with Fuzzy Logic Controler

Pasala Gopi, P.Suresh Babu, V.Subhashini

Abstract:- MPPT and furthermore CPG that utilizations fluffy rationale controller calculation. The Fuzzy rationale controller, By managing by method for nonlinear positions, suggest a predominant controller for these sort of associations. The method additionally profits by the explain and way to deal with the difficulty that conquers the multifaceted nature in demonstrating nonlinear frameworks. You can arrive at this objective, a MPPT and CPG model having A SOLAR module, The DC-DC converter (CHOPER), another fluffy rationale controller was created. Contemplating a buck converter and lift converter and furthermore buck-support converter highlights was done so as to recognize the most reasonable topology. An unsegregated sort of the sun oriented PV module distinguished converter was recreated and the outcomes used to fathom the master thoughts require to create and strain a fluffy rationale controller. wooly controller was coded as a continuous run program and the MPPT and CPG executed utilizing a dc-dc converter (CHOPER) constrained by a microcomputer. This outcomes can diminishing quality for the move of a photovoltaic power framework batteries can be completely energized and utilized during times of little astrophysical radiation.50KVA model was executed at 1KVA. Testing indicated efficiencies above 95.5% complete dead from power transformation, fluffy rationale MPPT and CPG, and estimation and control hardware.

Keywords— Boost converter, buck converter, fuzzy logic controller, maximum power point following (MPPT), micro grid, chopper's, photovoltaic's, total harmonic demodulation (THD), A Constant Power Generation (CPG).

I. INTRODUCTION

Within this photo voltaic system the VI-features and output power of solar strings with changes in a solar irradiance, temperature and ripen Accordingly, The maximum power point tracking (MPPT) plan is implemented the requests increasing the removed charge from the given PV system and improving a total charge conversion quality. Different Types of MPPT algorithms, increasing in reach and difficulty, has been found the read and write Each method have been different merits and demerits in different types like computational quality of efficient , increasing the speed of detecting a maximum power point (mppt), operation under half Changing and also power oscillations during steady-state condition.

Photovoltaic cluster framework is likely perceived and generally used to the cutting edge in electrical power uses. We create strait flow power without ecological effect of pollution. An among the growth in power generated products, the vitality through the Photovoltaic (PV) impact can be viewed as the most fundamental and essential manageable asset on account of the bounty, and maintainability of sun oriented brilliant vitality. For the most part sun based power age comprises a solar cluster, the dc-dc converter and also an inverter. The maximum power of a solar PV module can supply is providing the product of the current and voltage of a maximum power point (MPP), Depends on the varying temperature in solar irradiance. The total short-circuit current of solar module is indirectly inversely proportional of photovoltaic irradiance, reducing considerably as the irradiation reducing, the open circuit voltage varies step by step changes an irradiation. The voltage reduces considerably when the temperature increases, a short circuit current growing.

In layout, increases in sun based brightening produce augments in the short out current, while augments in temperature decay the open circuit voltage, which impacts the yield power of the PV module. This changeability of the yield power suggests that without a coupling device between daylight based PV module and weight; the system doesn't work the most outrageous power point (MPP). the structure and showing a fleecy reason controller perceiving the most outrageous power point in sun based PV module, using the characteristics of fluffy method of reasoning to address an issue through etymological verbalizations. This paper tells interest usage of the numerical sort suggested in for showing of the sun based PV module, which is hate diode ward models, simply use to process the twist fitting parameter. The results were differentiated and the P and O controller, which showed that the proposed technique presents less imperativeness disasters and certifications MPP in all cases surveyed in entertainment. It justifies referencing that this work is a bit of as a great deal of astute control techniques being surveyed in the assessment social affair was use a MPPT controller and CPG of negligible exertion and high profitability.

Hence, a general and adaptable calculation that accomplishes CPG was quick and dynamic outcomes and furthermore low control swaying during consistent state is fundamental for every single diverse topology of PVPPs. Absolute structures of the lattice associated PVPPs are one and two phase control transformation topologies, as portrayed. PWM control is given in order to coordinate the voltage of the lift converter.

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Two Loop PI Controlled Cascaded Re-Boost Seven Level Inverter Fed Induction Motor System with Superior Dynamic Response

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Emerging Trends in Electrical, Communications, and Information Technologies

P. Bhaskara Prasad, M. Padma Lalitha & B. Sarvesh

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Abstract

In recent times boost converter with seven-level inverter is a best choice of PV system with ac load. For elevating the DC level a reboost technology was used. DC can be converted into

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Optimal DG Placement for Loss Reduction using Fuzzy and Flower Pollination Algorithm

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ABSTRACT

This paper presents a new methodology using Fuzzy and Flower Pollination Algorithm for the placement of DG units in electrical distribution systems to reduce the power losses and to improve the voltage profile. Electrical energy plays an important role in day-to-day life. Keen interest is taken on all possible sources of energy from which it can be generated and this led to the encouragement of generating electrical power using renewable energy resources such as solar, tidal waves and wind energy. Due to the increasing interest on renewable sources in recent times, the studies on integration of distributed generation to the power grid have rapidly increased. The distributed generation (DG) sources are added to the network mainly to reduce the power losses by supplying a net amount of power. In order to minimize the line losses of power systems, it is equally important to define the size and location of local generation. There have been many studies, to define the optimum location of distributed generation. In this paper, Fuzzy approach is used to find the optimal locations of DG units and Flower Pollination Algorithm is used to find the optimal sizes of DG units. The suggested method is programmed under MATLAB software and is tested on 15-bus and 33-bus test systems and the results are presented.

Keywords: *Distributed generation allocation, Power losses, Loss Sensitivity Factors, Voltage Profile, Fuzzy Approach and Flower Pollination Algorithm.*

1. INTRODUCTION

"Distributed Generation", [1] is defined as small-scale generation located at or near the load centres. It has also been called as on-site generation, dispersed generation, embedded generation, decentralized generation, decentralized energy or distributed energy. Distributed generation is done through various small-scale power generation technologies. Distributed energy resources (DE) refers to a variety of small, modular power-generating technologies that can be combined with energy management and storage systems and used to improve the operation of the electricity distribution system, whether or not those technologies are connected to an electricity grid. Distributed generation is a technology which reduces the amount of energy lost in transmitting electricity because the electricity is generated very near load centre, perhaps even in the same building. This also reduces the size and number of power lines that must be constructed. Much analysis's has been done on DG unit Placement.

The objective of the DG placement problem is to determine the locations and sizes of the DG's so that the power loss is minimized. Even though considerable amount of research work was done in the area of optimal DG placement [1 to 12], there is still a need to develop more suitable and effective methods for the optimal DG placement. Some of the methods used for the optimal DG placement problem are efficient. Their efficiency entirely depends on the goodness of the data used. Fuzzy approach provides a remedy for any lack of uncertainty in the data. Fuzzy approach has the advantage of including heuristics and representing engineering judgments into the optimal DG placement problem. The solutions obtained from a fuzzy approach can be easily analyzed to determine optimal DG locations. The global optimization method is more useful in obtaining the optimal DG sizes. Flower pollination algorithm (FPA) is a computational intelligence metaheuristic that takes its metaphor from flowers proliferation role in plants. [13 to 16].

In the first stage, fuzzy approach proposed by H. Ng *et al.*, [9] M. Damodar Reddy and V.C. Veera Reddy [11, 12] is used to find the optimal DG locations. In the second stage, Flower Pollination Algorithm is used to find the optimal sizes of the DGs. The proposed method is tested on 15-bus, 33-bus, 34-bus, and 69-bus test systems and the results are presented.

2. PROBLEM FORMULATION

The total real power loss (P_L) in a distribution system having *n* number of branches is given by:

$$P_L = \sum_{i=1}^{n} I_i^2 \; Ri \qquad (1)$$

Here I_i is the magnitude of the branch current and R_i is the resistance of the *ith* branch, respectively. The branch current can be obtained from the load flow solution. The branch current has two components, active component (*Ia*) and reactive component (*Ir*). The loss associated with the active and reactive components of branch currents can be written as:

Analysis of Transmission Cost Allocation Strategies with Reliability for Deregulated Systems

Shaik. Muqthiar Ali, Mareddy Padma Lalitha, N. Visali

***Abstract*: This paper presents a learning review of various strategies related to the improvement of the reliability for the deregulated system, for instance, Genetic Algorithms (GA), Tabu Search (TS), heuristic calculations and system based techniques. These methodologies were produced for advancing reliability as either software or hardware exclusively. Besides, the cost segments related with limit utilize and reliability advantage charges are resolved and various optimization techniques are acknowledged of action of the goal work.**

***Index Terms*: Transmission cost allocation (TCA), Allocation Tier (AL) Transacted Power(TPO) deregulated electricity market, loss cost, Genetic algorithm, TS, SA.**

I. INTRODUCTION

The TCA to system entities is an aim of deregulated power system. It is mostly approved that the concern for the use of transmission system should conceal each cost and supports a trivial tier of profit for the possessors of the services. The obstruction converts how to assign these costs between the clients. It is fair mode which delivers them with exact AL built on economic tiers. The TCA ideas are the most regular than the wheeling which was the transference of TPO amongst 2 or more utilities over a transmission network of the 3rd one, cost for transmission procedure and the methodology to which it is processed and major focus issue in the power industry because of the progress in transmission abilities, the cost differentials concerning Generating companies and the melodramatic evolution in non-utility generation role. In some portions of the globally electricity supply industries endures transformation from regulated to deregulated structural. Several new concerns such as transmission embedded cost allocation, loss allocation, congestion management etc., occurs owing to this transformation

The chief purpose of some transmission pricing method is to familiarize an adequate rivalry in the electricity zone and afford proficient economic signals. Transmission pricing approaches are the general procedures of transmission costs into complete transmission charges. Generally, characteristics of transmission cost allocation systems are to offer location signals and motivations to reassure effective use of the transmission services. They also fulfill certain terms to evade cross-subsidies, to be clear and easier to execute, to confirm cost recovery, to deliver some suitable economic signals and to have continuousness with time.

II. RECENT RESEARCH WORKS: A BRIEF REVIEW

In literature, there has been a lot of research is proceeded for transmission allocation with consistency for the deregulated power system. A few of them are revised at this time,

Moradi*et al.* [1] has executed a consolidated GA/Particle Swarm Optimization (PSO) for the ideal area and estimating of Distributed age (DG) on conveyance frameworks. DG sources were getting more protuberant in conveyance frameworks inferable from the incremental nerves for electrical vitality. The expectation was to minimalize organize control misfortunes, better voltage direction and enhance the voltage dependability in the casing work of framework activity and security controls in outspread dispersion frameworks.

Amanulla*et al.* [2] have existed a power conveyance framework reconfiguration system as the unwavering quality and the power misfortune. Probabilistic dependability models were utilized to survey the unwavering quality of the heap focuses. A calculation for watching the negligible slice sets was utilized to see the insignificant arrangement of components performing among the feeder and some heap point. The ideal status of the changes to augment the unwavering quality and limit the genuine power misfortune was gotten by a double molecule swarm improvement based hunt calculation.

Borges *et al.* [3] have reconnoitered reliability models and approaches for valuing renewable energy resources impact on electrical generation convenience. Those models and procedures may be used to appraise the effects on the distribution systems reliability of distributed generation integration, while they were founded on renewable energy sources. The chief physiognomies of renewable resources models that have been established for wind, small hydro, solar and biomass, the leading techniques for reliability valuation of distribution systems with such resources cohesive.

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Abstract

Photovoltaic power generation has transformed into the most reassuring strategy for power generation among the renewable sources in view of its intrinsic favorable circumstances. The significant snag that photovoltaic system poses like other inexhaustible sources is the power intermittency in regard to atmospheric conditions like irradiation and temperature. These photovoltaic systems are interfaced to the grid through filters via inverters to prevent harmonics getting in to the grid. Generally, inductor–capacitor–inductor filters are employed in grid-connected system, as they provide better harmonic attenuation than inductor and inductor-capacitor filters. However, they bring resonance as well as oscillations into the grid-connected system. So, in order to suppress the resonance that brings instability problems in the system, active damping control strategies are adopted. But these conventional active damping methods increase the complexity of the system as they need extra sensors. This article proposes a fuzzy logic control-based active damping method to ease the control activity. The proposed controller is contrasted with the injected grid current feedback controller to investigate the resonance damping and the stability of grid interfaced multilevel inverter with inductor–capacitor–inductor filter. When compared with the injected grid current feedback controller, the fuzzy logic control approach promises satisfactory performance based on harmonic content, resonance peak, and stability analysis. The compliance according to the industrial standard in terms of harmonics is met in this article and is duly documented within the manuscript. Simulation results verify the design strategies and the effectiveness of the proposed fuzzy logic control strategy.

Comparison of Closed Loop Optimal High Level Novel Multilevel Inverter fed Induction Motor Drive using PI and Fuzzy Logic Controllers

Bolla Madhusudana Reddy, Y.V. Siva Reddy, M. Vijaya Kumar

Abstract— The Multilevel inverter technologies which are widely used in medium, high voltage and high power requirements have attracted many researchers around the world. In comparison with conventional two level inverters ,the multilevel inverters(MLIs) gives better performance by the way of lower harmonic distortion, low electromagnetic interference and produces quality output . Control techniques such as complex PWM technique and more count of components need in MLI for achieving power quality .In this primarily introduces new high performance one phase 63 level MLI topology of least count of switches .Later on the same is extended for three phase high performance MLI, that offers minimum THD. Three phase induction motor is coupled to the proposed MLI in open loop form and then implemented in the closed loop form with proportion integral (PI) controller. This drive is further extended with a fuzzy logic controller (FLC).The validity of proposed drive with respect variations in torque and speed is verified with MATLAB/SIMULINK.

Key words: Multilevel inverter, Induction motor, PI controller, FLC, THD, speed, Torque

1. INTRODUCTION

The multilevel inverters (MLI) are known for producing quality output than that of classical two level inverters when used for industrial applications. The traditional MLIs [1] are basically divided as (a) Neutral- Point clamped MLIs, Fixed capacitor MLIs and Cascaded H-Bridge MLIs. There are additional new topologies like switched capacitor multilevel inverters, hybrid MLIs a combination diode clamped and flying capacitor, reversing voltage MLIs and modular MLIs. A 31-level asymmetrical cascaded MLI is implemented for medium power requirements [2] . A novel SVPWM applied for minimizing common mode voltage in DTC of IM drive [3].Comparison made between symmetrical asymmetrical MLI [4].Single phase cascaded MLI used with reduced switches using basic units [5]. A performance is investigated for four-Switch three phase inverter with PI and FLC is [6]. Single-phase 63-level modular MLI connected to IM drive for solar PV requirements [7].

Traditional three phase inverters are capable for low and medium voltage applications but not much compatible for high voltage requirement. To overcome above back drop classical MLIs were implemented for high voltage and high power applications. But conventional MLIs suffer with different disadvantages such as more switching devices, high switching losses and more THD. Three phase induction motor (IM) is frequently used due to simple construction and ruggedness which could be connected to MLI in AC drives. The conventional type MLI feeding induction motor drive performance is poor in the case of speed torque variations.

A novel type high level optimal structure MLI proposed topology is designed with lower switching devices with SPWM control technique. The proposed MLI offers low switching losses, low off state voltage drops and minimum THD due to nearly sinusoidal output by more number of levels. The proposed MLI control of IM drive through FLC is compared to proposed MLI feeding IM drive through PI controller for achieving better speed torque performance.

2. DESIGN OF CONVENTIONAL & PROPOSED MULTILEVEL INVERTER

A. Design of conventional topology multilevel inverter

The level of a conventional inverter depends upon the DC source voltages. If equal sources used then 2n+1 level obtained, ‘n’ indicates number of dc sources considered. If dc source voltages are in the ratio of 1: w: x: y: z the number of levels is 2(1+w+x+y+z) +1.To achieve a 63 level inverter the measured dc source voltages should be in the ratio of 1:2:4:8:16 .The 63 level cascaded MLI is shown in Fig 1. The positive levels are generated by turning ON the SN2 & SN3 and negative levels are generated by way of turning ON the SN1 & SN4 switching devices. Anywhere subscript N represents the Nth inverter unit [14]. Output voltages for ON state switches with conventional 63level MLI are tabulated in Table 1.

B. Design of proposed sub multilevel Inverter topology

The proposed sub MLI is shown in Fig 2. This projected topology contains ‘n’ number of DC Sources. Generally the quantities of DC Sources are dissimilar. If suppose to get identical steps of voltage, every DC source supposed to be similar as Vdc. The no: of switches inside every sub MLI topology is n+2, where few are unidirectional switches, leftover are bidirectional. Unidirectional switches hold an

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Original Articles

A novel control approach for damping of resonance in a grid interfaced inverter system-fuzzy control approach

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ABSTRACT

LCL (Inductor, Capacitor and Inductor) filters are commonly employed in grid allied system, provide better harmonic attenuation than L (Inductor) and LC (Inductor and Capacitor) filters. They bring resonance in addition to oscillations into grid coupled system. With the intention to mitigate the resonance that brings instability problems in the system, active damping control strategies are adopted. Active damping method based fuzzy logic control to ease control action on the considered scheme is focused in

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Experimental Research on Improvement of Battery Reliability

G.V. Subbaiah, P.V.Sanjeeva Kumar, P.Hemavathi, Y.Suresh Reddy

Abstract*: The heat control and maintenance of batteries is essential for effective operation of UPS in harsh environmental condition since battery working reliability ,performance, durability and its economy is directly related to the environmental temperature and air flow around batteries .Therefore, ideally, batteries should be use within its comfortable temperature range to get its optimum performance. Compact design of Batteries in enclosed environments necessitates thermal management of the battery system for optimum life and performance. This invention proposes an efficient vapour compression refrigeration system to effectively cool the batteries and maintain optimum battery surface temperature of 25 °C for better performance and extended battery life at 40°C external ambient temperature. Moreover Silica gel based Solid desiccant wheel is used to absorb moisture from air so that condensation in the battery cabinet can be minimized .Computational fluid dynamics and heat transfer simulation was performed to devise a initial concept. Experimental validation of the prototype was made to verify simulation results and actual temperature distribution.

Index Terms*: : UPS, Battery, Vapour Compression Refrigeration, RBC (Replicable Battery Cartridge).

I. INTRODUCTION

Competitive environment necessitates modular design for power circuit and battery. This provides a greater flexibility for user to upgrade the UPS system during its life time. Depending on the user requirement several battery modules are assembled within the metallic enclosure. This results in modules operating at different temperatures during charging/Discharging cycles. The change in Temperature from one module to other in a battery pack causes to changes in charge or discharge behaviour in respective module and which in turn to electric unbalancement of modules or packs , finally decreases the pack performance. The object of temperature management in the battery cabinet is to ensure a battery pack maintained at optimum average temperature (25°C) provided uniform temperature distribution. This helps increasing battery life and reliability of the charging and discharging operations. To evaluate the battery pack design heat transfer, fluid flow is used. The simulated CFD analysis results are validated through real time testing.

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Originally there was an assumption that the UPS is being operated in controlled environment. In developing economy, the situation is totally different.UPS is being operated in harsh environment and this resulted in more failures. Also within warranty, the batteries were getting replaced multiple times. This had incurred huge cost impact and predicted failure rate is currently greater than 100%.

Ben Ye ,Md Rashedul H R et.al are investigated the temperature control and optimization of cooling plates for battery module for electrically operated vehicles [1]. The performance analyses of Li-Ion batteries are investigated under various thermal loads [2-4]. The situ method has used in order to analyze the performance characteristics batteries [5]. The latest progress and accurate state of charge conditions of Li –Ion batteries [6-7] are really helped to improve the reliability of battery in the present work. The technique of halogen conversion- interaction chemistry in graphite, Scalable Synthesis of Dual-Carbon and experimental examination of large capacity gives the good idea in order to improve the reliability of batteries [8-12].

1.1 Conceptual design

To evaluate the battery pack design and provide solution for battery thermal issues for harsh working environment, we have used heat transfer, fluid flow principles, CFD analysis and experimental thermal validation. Fig-1 shows integration of a Battery cabinet with cooler.

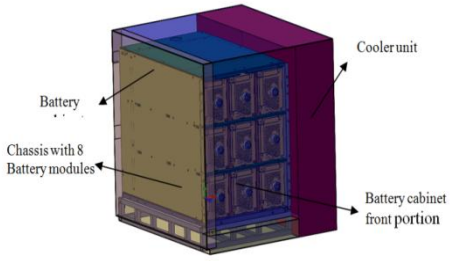

Fig -1: Integration of cooler with battery cabinet

1.2 Cooling Architecture

Vapour compression refrigeration system is attached to the side of the battery cabinet along with the desiccant dehumidification as shown in the Fig-2.

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Performance Analysis & Optimization of IC Engine Process Parameters Using Bio-blended Diesel–Methanol with Waste Cooking Oil through Taguchi Method

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Abstract : The energy consumption is always on the rise increasing worldwide warming too. This has brought renewable energy source and alternate fuels into centre, with biodiesel is a new option but its expenditure is more. Thus a feasible choice is to blend biodiesel with other fuels to make it environment eco-friendly and decrease the demands on mineral fuels. The bio-fuels used for improving the performance of an engine so, in this work waste cooking oil used as alternative fuel. Current one of the main intends of this work is to improve the performance of IC engine by bio blended fuels. The process parameter mostly affected on engine performance. These process parameters of IC engine have been optimized by using alternative fuels with the help of Taguchi method. An experimental investigation has been conducted on I.C engines, the results will be compared with that of diesel in terms of performance. Experimental layout designed by employing design of experiments methods and the tests will be conducted with combination of factors as per Taguchi's orthogonal array. The optimum combination level of factors will be obtained by using Taguchi parametric design. Finally obtained response results will be compared with pure diesel responses values.

Keywords :
Keywords: Bio-diesel,IC engine,Waste Cooking oil,Taguchi Method

Nomenclature

B Blended
L3 Level3
IC Internal Combustion
L1 Level1
S/N Signal to Noise
L2 Level2
BP Brake power
V Voltage
IP Indicated Power
I Current
FC Fuel Consumption
PD Pure Diesel

I. Introduction

In recent times, the world has been confronted with the energy crisis due to depletion of natural [1] resources and increased environmental problems. The situation has led to the search for an alternative fuel, which should be not only sustainable but also environment friendly. For developing countries, fuels of bi-origin, such as alcohol, vegetable oils, biomass, biogas, synthetic fuels, etc. are becoming important [2]. Such fuels can be used directly, while others need some sort of modification before they are substituted for conventional fuels. The energy consumption is ever on the rise increasing global warming too. This has brought renewable energy source and alternate fuels into focus. Using biodiesel is another new option but its cost is more [3, 4]. Thus a viable option is to blend biodiesel with other fuels to make it environment friendly and reduce the pressure on mineral fuels. Optimization technique plays a vital role to increase the Performance of the IC Engine. Quite a lot of research attempts have been made for Modelling of IC Engine process [5, 6] an investigation of the process performance to recuperate Mechanical Efficiency. Improving the Mechanical Efficiency and Fuel Consumption are still challenging problems that restrict the expanded application of the technology [7, 8].

2. Methodology

To fulfil the objective of the present work various theories, methods and techniques like DESIGN of Experiments and Taguchi.
The following are the steps involved in this approach
Selecting the alternative fuel Trasistification

- Produced alternative fuel
- Blending of alternative fuel with diesel
- Designing the experimental layout-DOE
- Create experimental layout
- Conduct experiments on Engine
- Optioned Results
- Optimization Method-Taguchi
- Conformation Test

2.1 Taguchi design

Dr. Genichi Taguchi is regarded as the foremost proponent of robust parameter design which is an engineering method for product or process design that focuses on minimizing variation and/or sensitivity to noise. When used properly, Taguchi designs provide a powerful and efficient method for designing products that operate consistently and optimally over a variety of conditions. Taguchi proposed several approaches to experimental designs that are sometimes called "Taguchi Methods." These methods utilize two, three, four and five and mixed-level fractional factorial designs. Taguchi refers to experimental design as "off-line quality control" because it is a method of ensuring good performance in the design stage of products or process products or processes.

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Effect of novel hybrid texture tool on turning process performance in MQL machining of Inconel 718 superalloy

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ABSTRACT

Higher cutting zone temperatures are responsible for poor turning process performance during dry machining of Inconel 718 material. In the present work, a novel hybrid surface texture tool under minimum quantity lubrication (MQL) has been proposed to reduce the decremental effects that cause during machining of Inconel 718 material. Present work compared to the performance of three tools, namely, untextured tool (T1), texture tool having circular pit holes (T2) and hybrid texture tool combination of circular pit holes and linear grooves (T3) under MQL cooling technique. It was observed that hybrid texture tool (T3) significantly reduced the cutting zone temperature (T_m), tool flank wear (V_b) and surface roughness (R_a) to a maximum of 36%, 59% and 46%, respectively, when compared to the T1 tool whereas it was 22%, 48%, and 30% when compared to the T2 tool, respectively. The present work meets the stringent environmental regulation along with the improved machinability of Inconel 718 superalloy.

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Minimum; quantity; lubrication; machining; texture; tool; surface; roughness; Inconel 718; superalloy; wear; temperature

Introduction

Superior heat resistance of Inconel 718 superalloy material leads to having many applications in many fields, especially in aerospace applications. Dry machining of these material results in high manufacturing cost and poor surface quality.[1] Flood cooling technique is the one and has been used to control the cutting zone temperature during machining of hard to cut materials. However, it has concerns about the environment as well as operators health negatively.[2] Metal cutting industries are searching for effective methods to recover the process performance along with satisfying the environmental regulations. Cryogenic, MQL and compressed air cooling methods are recently developed to perk up process performance by satisfying the stringent environmental regulations.[3] Sivaiah and Chakradhar observed superior turning performance characteristics with cryogenic cooling during machining of 17–4 PH stainless steel (PH-SS) material.[4,5] Nevertheless, cryogenic machining required costly experimental setup. However, recent literature exposes that the surface texture of the tool is also an effective approach to increase the wear resistance of the tool. Palanisamy et al.[6] look into the R_a, cutting forces (F_c) and V_b outputs by considering the cryogenically treated texture tool using Response Surface Methodology (RSM) during dry turning of 17–4 PH-SS. It was reported that mathematical models were developed by conducting experiments based on L_{27} and found close agreement with experimental results. Further, optimum cutting conditions were identified. Thomas and Kalaichelvan[7] developed different single design surface texture tools and carried out machinability studies during dry turning of mild steel (EN3B) and aluminum (AA 6351) materials with texture tools and comparison of results were done with untexture tools, respectively. From results, it was found low F_c and T_m when compared to the untexture tools, respectively, at varying cutting velocity conditions. The given reason for attained favorable conditions in texture tool was due to the increased cooling rate through convection mode at the tool–chip interface. Further, it was reported that square dimple texture tool was outperformed in improving the process performance over other texture tools due to the reduction in the tool-chip contact length (L) at the cutting zone. Arslan et al.[8] reviewed the literature on surface texture tools and concluded that surface texture tools can improve the metal removal process performance. Further, it was reported that the method of lubricant supply and geometry of texture tool can significantly affect the process performance.

Dinesh et al.[9] investigated the different texture tools, namely, parallel (*P*-1), perpendicular (*P*-2) texture to the chip flow direction as well as untexture tool under external spray cryogenic and dry cutting conditions, respectively, during machining of ZK60 alloy. Favorable machinability was found with *P*-1 tool under both environments when compared to the *P*-2 respectively. Additionally, it was found poor turning performance with an untexture tool when compared to texture tool under both cutting conditions, respectively, due to the high 'L' value. Manikandan et al.[10]

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Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/lmmp.

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Tensile and Micro Structural Properties Analysis of Biodegradable Polymer Blends

B Ramanjaneyulu, N Venkatachalapathi, G Prasanthi

Abstract: ***poly lactic acid (PLA), Acrylonitrile butadiene styrene (ABS) and tapioca cassava starch powder (TCSP) were melt blended using twin screw extruder. Mechanical properties, which are tensile strength, young's modulus, % elongation and flexural strength Vs. flexural modulus determined by the help of Universal testing machine (INSTRON UTM-3969) .Morphological of PLA/ABS /TCSP blends was investigated by the help of scanning electron microscopy (SEM), the SEM images of (b-d) shows spherical morphology on the tensile fractured***

Key Words: Tensile properties and microstructure of polymer blends.

I. INTRODUCTION

Manufactured Synthetic polymers are of significance in current science and innovation as they are basic to our day by day existence with a wide scope of uses in different fields, for example, bundling, farming, food, consumer items and medical appliances. In the previous couple of decades, significant consideration has been centered on the biodegradable polymers because of their one of a kind biodegradability, upgraded biocompatibility just as adaptable physical and mechanical properties PLA and its copolymer it's have been utilized broadly in various fields, for example, tissue designing, polymer building, tranquilize conveyance framework and a fewmedical inserts of vital. As utilization rate in the year 2010, PLA was seen as the world second most imperative bio plastic [1]. There are report discovered that PLA and PCL structure an incomplete miscible mix where it demonstrated an expansion of extreme malleable strain of PLA when PCL was added to this blend system [2]. PLA characteristic crude materials of polymers. [3-7].Mechanical properties of the following blends approach view [8]. Thermo Plastic [9]. The crystalline morphology of the PLA/PBS blends wasmeasured by scanning electronMicroscopy (SEM). Mechanical properties were examined by tensile testing [10].

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In thisresearch paper, explore the effect ofPLA/ABS/TCSPpolymer blends, on mechanical and morphological properties , which are prepare on the weight basis like as pure PLA and ABSPLA70/ABS30, PLA50/ABS50, PLA30/ABS70, PLA47.5/ABS47.5/TCSP5, PLA45/ABS45/TCSP10 PLA60/ABS25/TCSP 15 and PLA25/ABS65/TCSP15, were produced bymeltblending.

II. METHODS AND MATERIALS

A. Materials

The PLA used in this work was a commercial grade type Ingeo™ Biopolymer 3052D (MFI = 14-30 g/10 min at 210 ^{0}C) provided by Nature Works (Minnetonka, MN, USA).Its physical and thermal Properties of Density and glass progress temperature in the 1.24 g cm^{-3}and 55– 60 °C range individually, and a dissolve temperature extend involved between 155– 170 °C. With respect to, a commercial grade 3903HSN/SAC (MFI = 18 - 23 g/10 min at 160 °C) was provided by LG Chem ROK Ltd. (SOUTH KOREA) in granules structure with a thickness of 1.05 g cm^{-3}, MFI= 21.3g/10 min (220°C/10 kg, MFR= 50 g/10min (200°C/21.6 kg)]. 1.146 g cm^{-3}. ABS fundamental thermal most extreme arrangement temperature, T_{Max} of 88 to 89 °C in air, Cassava starch Commercial grade 11081400 HS (Density and consistency of 0.6-0.7 g cm^{-3}and 200 - 500 Cs) (i.e.Centi stokes(Cs)) provided by ANGEL STARCH&FOOD Pvt.Ltd (Chennai INDIA).It has a molecule size of 0.075mm.

B. Manufacturing of binary and ternary of PLA/ABS/TCSP Blends

Manufacturing of binary and ternary blends were completed in two separate stages. Before further preparing, all materials were dried to maintain a considered reserve from wetness, which could influence hydrolysis during collecting. PLA, ABS and TCSP were dried at 60 ^{0}C for 24 h. The amount of PLA in all ternary blends was, maintained at 70, 50, 30 wt%. In binary blends 60, 47.5, 45and 20 wt%.in ternary mixes as showed inTable 1, and the Results had been in comparison with pure PLA, as the primary objective is to get toughened PLA formulations. The suitable amount of each component have been measured and exactly pre-blended in a zip pack. Until homogenization. At the primary manufacturing stage was conducted via extrusion in a twin-screw extruder (ZV20-High Torque, L/D= 40, NEOPLAST) at 196^{0}c (extrusion die) and 45 rpm, from Central Institute of Plastics Engineering and Technology, CIPET (Kochi, India). A pivoting pace of 40 rpm was utilized with a temperature profile of 190^{0}C (expulsion bite the dust), 195^{0}C, 200^0 C, and 205^0 C (feeding, hopper). These conditions promise great processing in terms of viscosity and avoid thermal degradation, as past analyses in the gathering have revealed.

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Geopolymer Brick by using Flyash, GGBS, Silica Fume and Kadapa Slab Dust

N. R. Gowthami, A. Sivaji, K. Ajay Kumar Reddy

Abstract*: *Brick is the former construction material, a standard-sized non load bearing building component. The ancient bricks manufactured by clay, earth or mud. By 2007 the new 'fly-ash' brick made up of cement and flyash which is reliable, weather & acid resistant. The cement is a hugely used building material and liberates CO2 leading to pollution. To minimize pollution and a step to advancement in sustainable development. The current research results to geo polymer brick, where the cement is replaced with GGBS, silica fume and Kadapa slab dust. For bonding, polymers were used with limited water content. Hence produced brick is a hybrid geo polymer brick with multi material combination. Fly ash 75%- GGBS 25% as a base material. GGBS is partially replaced with silica fume and Kadapa slab dust by 2 to 5%. Evaluated through compressive strength results in which we found three optimum proportions such as FA 75%-GGBS22%-SF3% & 75% FA-22% GGBS -3% KSP.

Index Terms*: *Flyash (FA), Ground granulated blast furnace slag (GGBS), Silica fume (SF)

I. INTRODUCTION

A brick is a building material, used to construct walls, pavements and other elements. Traditionally, A brick is composition of clayey soil, fine aggregate, and lime(calcium carbonate). Bricks are classified in to various types based on geometry and composition of materials which vary with region. Initially in 7000 BC sun-dried mud bricks were introduced, later kiln-dried clay bricks are introduced which are more weather-resistant.

Dr. Bhanumathidas and Kalidas in 1991 has developed and got petent on Flyash, Lime &Gypsum for achieving high early strength due to the conversion of calcium aluminates into calcium alumino sulphates. Leads to reduction in cost by 20%. Even though in the present scenario, a well known fact that cement is universal constructional material made of clay & lime stone a naural resource, because of its continuous usage soon they may exhaust. In order to protect the natural resource and to reduce pollution as an alternate material for sustainable development Geo-polymers-NACL & NAOH is introduced as a binding material. The materials flyash, kadapa slab dust & GGBS are used in the manufacture

II. LITERATURE REVIEW

Hardjito and Rangan studied fly ash based Geo-polymer Concrete. The material used are fly ash-class F acquired from Thermal power station. Fly ash contains calcium by 2 percent by mass. They observed the compressive strength data and concluded that fly ash based geo-polymer concrete has good strength, fit for structural application. **Davidovit's** the poly condensation of geo-polymer occurs at lower temperatures less than 100°C and the chemical reaction involved in their formation. **Hardjito et al.** concluded water to geo-polymer solids ratio has considerable effect on compressive strength of geo-polymer concrete, where as **Fongjan and Ludger** observed that potential properties of geo-polymeric mortar has many key factors like, physical properties, oxide-mole ratios, curing conditions and morphologies of solid materials,. **Rangan et al.** concluded that fly ash geo-polymer concrete has magnificiant resistance to durability properties like creep, shrinkage and chemical attacks. **Hardjito et al.** found that effects of the concoction time and the strength gaining time. **Sumajouw et al.** studied the mechanical properties of geo-polymer concrete columns and beams. **Barbosa et al.** observed the effect of the oxides molar composition and polymerization process- water content. **van Jaarsveld et al.** studied that the properties of geopolymer is affected by water content. **Ranganath and Mohammed** analysed the effect of materials, water content, polymer proprtioning, and the time interval of accelerated curing on the properties of geo-polymer concrete, whereas **Mustafa Al Bakri et al. and Jamkar et al.** analysed the fineness of fly ash leads to increase in workability and compressive strength **Chindaprasirt et al (2007)** found that, to produce a higher strength geo-polymer the optimum sodium silicate to sodium hydroxide ratio was in range of 0.67 to 1.00. Alternatively, the concentration of NaOH between 10M and 20M give small effect on the strength

III. ENGINEERING SIGNIFICANCE

Portland cement emits carbon dioxide majorly leads to global warming. Among the greenhouse gases; carbon dioxide contributes about 65% of global warming also to secure the natural resources.

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Testing and characterization of binary and ternary blends with poly (lactic acid), acrylonitrile-butadiene-styrene and tapioca cassava starch powder

B. Ramanjaneyulu [a], N. Venkatachalapathi [b], G. Prasanthi [a]

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Abstract

In this research paper explores about biodegradable polymers such as Poly lactic acid (PLA), Acrylonitrile-Butadiene-Styrene (ABS) and Tapioca cassava starch powder (TCSP) and their blends prepared using conventional method. The prepared bio degradable polymer blends are analyzed with the help of Universal testing machine (UTM-3969), scanning electron microscopy (SEM).On the weight basis PLA, ABS, and TCSP are transferred into binary and ternary blends such as PLA, ABS, PLA/ABS, PLA/ABS/TCSP (wt.%) etc. are compared with various mechanical properties such as tensile stress v/s tensile strain, tensile strength v/s tensile module and compressive. The scanning electron microscopy images for tensile fractured samples showed smooth homogeneous finish and good partial distribution.

Introduction

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INVESTIGATION OF MECHANICAL & METALLURGICAL PROPERTIES OF HYBRID METAL MATRIX COMPOSITES

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ABSTRACT

The composite material expects a fundamental part in the aviation and vehicle applications in light of their remarkable structuring properties. Most of the experts have offered centrality to Aluminum Metal Matrix Composite (Al-MMC) in light of hardness and harsh nature of fortress segments like Nickel (Ni) and silicon carbide (Sic). In this paper an undertaking has been made to make and considers the mechanical properties of Al6061-Sic/Ni with different associations is made through mix tossing process. It is found that 10% of sic and 5% of Ni strongholds in Aluminum compound has the best extraordinary quality among different pieces. The hardness of Al6061-Sic/Ni is lessened with extending the dimension of nickel.

KEYWORDS: Al-MMC, Sic, Ni, Stir Casting Process & Mechanical Properties

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Original Article

INTRODUCTION

Aluminum is used for lightweight applications in view of its low thickness. Aluminum -based materials discover various applications in vehicle and avionics organizations. Among the diverse strongholds like SiC, Al2O3, AIN, B4C, Ni, Graphite used as a piece of MMCs, SiC is one of the low thickness bolster open in broad sums. In later past, due to astounding, modulus, wear assurance and shortcoming insurance AMMCs with SiC strongholds have commonly found their applications in flight, military, normal, manufacturing ventures, etc starting late the particular amassing strategies are open for Al arrange composites, among them, blend tossing is a champion among the best process in light of its ease, versatility, low taking care of cost and high creation rate. Thusly, Al arranges composites are fabricated through mix tossing process in a manner of speaking. M. Vamsi Krishna et al., Investigated the Mechanical Properties of Al6061-SiC and Al6061-SiC/Graphite hybrid composites. These composites were prepared using blend tossing method in which the proportion of help is changed from 5-15% in endeavors of 5wt%.

The microphotographs of the composites uncovered extremely uniform spread of the particles in composites with a get-together at few spots. The test densities apparently were lower than theoretical densities in the majority of the composites. The dispersed Graphite and SiC in Al6061 compound contributed to improving the adaptability of the composites. The assessing electron micrographs of the precedents demonstrated uniform dissipating of the fortification particles in the framework with no voids. Baradeswaran has done experimentation on Effect of Graphite Content on Tribological direct of Aluminum mix Graphite Composite. He broke down the

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Experimental Studies on Two Stroke SI Engine by Using Novel Piston and Gasoline Blends

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Keywords:
performance parameters, un burnt hydro carbons emissions, CO emissions, ethanol, and methanol

ABSTRACT

It is well known fact that thermal efficiency of the two stroke engines on road usually ranges from nearly 35 % to 45 % and remaining energy is dissipated to the surrounding media. Therefore, it becomes the primary need to improve the engine performance. From the past decade and so and exhaustive research is carried by various researchers towards attaining higher level of the engine performance by doing certain modifications of the engine component family. Majority of researches focused on adding of coatings on pistons and by using the blends the performance characteristics are studied. The main aim of the present work is to develop a novel piston that reduces the percentage level of pollutants release to atmosphere and aid in improving the performance of the system. The work mainly focused on influence of novel piston and different blends in enhancing the engine performance and suppressing the level of emissions, thereby reducing the global working effects. The experiments are performed on single cylinder two stroke SI engine by using conventional piston, novel piston-1 (Bi metallic piston with copper piston crown), novel piston-2 (Bi metallic piston with Br piston) and different blends. It is noticed that the emission levels of pollutants got reduced by using novel piston-1and E20 blend and performance wise also novel piston-1 and M20 blend gave the best results in overcoming the burning issues in two stroke SI engines.

1. INTRODUCTION

Two stroke SI engines take part in the field of transport and agriculture, but with the increasing demand of fossil fuels its limited reserves environmental pollution and lower thermal efficiency (around 30 % to 40 %) led to the development of alternative fuels and modifications in engine design. Several researches are carried in improving the engine performance by using various alternative fuels for controlling the emissions like CO and UBHC etc. in the field of two stroke engines.

The engine performance can be greatly enhanced by controlling the thermal energy dissipation from combustion chamber to surroundings. Many researchers have done their work on applying coatings in the combustion chamber.

Also the use of petroleum fuels release harmful emissions which causes global warming effects and health related problems. The disadvantages ultimately led to the path for development of alternate fuels keeping in mind of controlling emissions and supporting the demand for running automobiles by alternate fuels.

N.Nedunchezhian et.al discussed about the plasma coating method coating on the cylinder head and piston. The selected catalyst is copper. The in cylinder coating of copper catalyst reduces the fuel consumption. There is 10 % improvement in fuel economy at 2.0 kW load condition achieved. The catalyst activity is higher at higher load conditions. The combustion rate is increased at all load conditions. The combustion parameters indicate a faster and cleaner combustion when engine is coated with the catalyst. The HC emissions are reduced at significant level [1].

Michel Anderson Marr et.al done his investigations on metal and ceramic thermal barrier coatings for SI engines. It shows a reduction in peak heat flux with the thermal barrier coatings by 69 % and YSZ by 77 % relative to the conventional surface. Also from the experimental observation the metal TBC gave better performance when compared with the uncoated piston and YSZ coated piston [2].

Narasimha Kumar, S, et al. has discussed about the copper coat on piston crown of 300 microns of thickness by using ethanol as blend to petrol to find the engine performance characteristics. The performance parameters like volumetric efficiency, Thermal efficiency are increased by 3 % and 22 % respectively with gasoline and ethanol blend, with coated engine(copper) in contrast with pure gasoline operation and emission characteristics. The emissions like UBHC and carbon monoxide during exhaust of engine got decreased by 25 % and 30 % respectively in conventional engine with gasoline and ethanol blend when contrast to pure gasoline operation. The pollutants decreased by 20 % with

Catalytic coated engine when contrast to conventional engine for both the test fuels [3].

M. Dharani Kumar et.al discussed about the copper coated piston to lessen the exhaust emissions for the two stroke SI engines. The exhaust gases emissions namely CO, HC, O_2, CO_2 and have been reduced to 1.02 %, 582 ppm, 15.37 % and 1.42 % correspondingly by using Emission Gas Analyzer [4].

Sailesh Dhomne et al. done experimental investigations about the thermal barrier coatings on piston for two stroke engines to increase the engine performance parameters of specific fuel consumption is reduced by 9.73 %, and thermal efficiency increased by 12.73, Therefore Cr -Ni- Ce TBC is an efficient method to improve performance of two stroke SI

Thermodynamic Analysis of Solar Organic Rankine Cycle by using Working Fluid for Low Temperature Application

Lokanath M, Santhosh Kumar B, Kiran Avns, Saleemuddin S M

Abstract: ***The increasing energy need due to industrial expansion and population size led the human race for usage of major conventional energy sources like oil, coal, gas. But these resources trouble the environment leading to potential problems like pollution, global warming etc. Thus, in order to overcome the burning issues, many alternative energy sources are developed such as wind, hydro, solar, tidal, geothermal, biofuel, nuclear etc. are used for power generation. Among these the solar energy is plentifully available resource and can be employed to organic rankine cycle technology for power generation. The main aim of this research work is to develop a novel power generating system by using alternative energy resource i.e. solar energy. The work focussed on simulating the power generation of producing unit by employing solar organic rankine cycle and working fluids R-245fa, R-227ea & R-245fa/ R-227ea mixture. The Organic Rankine cycle efficiency mainly depend on the Selection of working liquid, working condition has extraordinary impact, and its vitality proficiency and effect on nature. The performance parameters like Solar Organic Efficiency, Solar Collector Area, second law efficiency, Turbine volume expansion ratio etc. are studied. It is noticed that organic efficiency of refrigerant mixture R245fa/R227ea is 4% more compared to pure fluid R227ea at turbine outlet temperature of 353K.The Volume expansion ratio of the turbine comparing to refrigerant mixture is reduced by 25.4% & 30% compared to pure refrigerant R227ea and R245fa.***

Keywords: Organic Rankine Cycle, Working fluids, Waste heat Recovery, Low Temperature Application, Solar collectors.

I. INTRODUCTION

Organic Rankine Cycle (ORC) can convert low medium grade heat into electrical or mechanical power and has been widely recognized as the most promising heat-driven technologies. The ORC generate power from low-temperature heat, they can be implemented as power generation units for waste heat recovery systems, geothermal applications, and solar applications.

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The Organic Rankine Cycle's work on Rankine cycle instead of water it utilise Organic Working Fluid which have higher molecular mass and lower Boiling point that can produce power from Low temperatures heat sources.

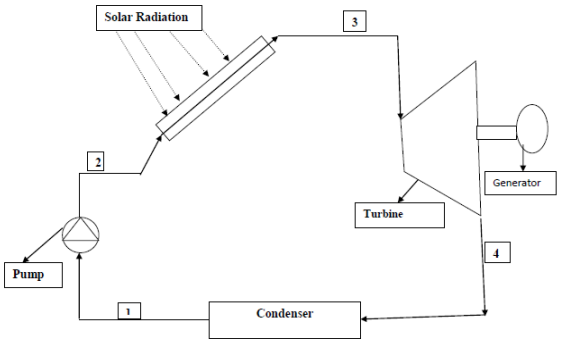
1.1. PROBLEMS IN TRADITIONAL RANKINE CYCLE

In spite of the fact that Rankine Cycle is chosen as the power cycle however there are various issues which exist in traditional Rankine Cycle.

- A Rankine cycle uses the water as working fluid and it doesn't allow productive recuperation of waste warmth beneath 370°C.
- One of the crucial issues of water is ought to be superheated in the Rankine Cycle. The superheating is imperative to ensure the idea of submerged water after the development in the turbine is dry.
- The nature of submerged water should not be underneath 0.88. Right when the quality is lower, dimension of vapor will be higher and deterioration in turbine front line will be at a higher rate.
- Due to low develop temperature, low weight, high unequivocal volume, tremendous turbine estimation required.
- High weight drops to transform into a high enthalpy drop thusly exorbitant multi sort out turbines required.

1.3. SOLAR ORGANIC RANKINE CYCLE

1.Organic Rankine cycle Uses Organic Working fluid instead of water. The Working fluid is pumped from low pressure to high pressure with help of a pump by isentropic compression process.



2.Thhigh-pressurere working fluid enters the Flat plate collector where it is changes it phase from liquid to vapor by absorption an external solar radiation at constant pressure process.

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FLEXURAL ANALYSIS OF SMART STRUCTURAL COMPOSITE LAMINATES BY USING A NEW HIGHER ORDER THEORY

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ABSTRACT

The present article involved the enrichment of a higher order shear deformation theory especially for composite laminates embedded with piezoelectric materials under electro-mechanical loading. The main aim of the present investigation is to propose the analytical formulations and solutions to examine the flexural behavior of the laminated composite plates embedded with piezoelectric fiber reinforced composite by using a higher order theory. The assumed two models M1 & M2 are developed separately with individual higher order theories. The principle of virtual work is used in order to obtain the boundary conditions and the governing equations of equilibrium. The Navier's technique is involved in order to obtain the solutions. The results are tabulated and analyzed for different aspect ratios, voltages for the study of variation of in plane and transverse displacements and also the normal stresses and transverse shear stresses.

KEYWORDS: Smart Materials, Higher Order Shear Deformation Theory, Principle of Virtual Work & Navier's Technique

Received: Dec 28, 2018**; Accepted:** Jan 18, 2019**; Published:** Feb 25, 2019**; Paper Id.:** IJMPERDAPR201930

Original Article

1. INTRODUCTION

The conventional structures have no control over the induced deformation where as in smart structures the state of deformation is continuously monitored and has good control over its configuration of deformation. The latest development in the composite science is the piezoelecteic materials are embedded to them in form of distributed sensors or actuators. It is really a good focus on the development of innovative materials in the field of material science engineering. Combining the properties of conventional composites with the intelligent materials like piezoelectric materials, bimetal alloys etc. results the generations of smart composite materials. The advanced engineering applications like air craft, aerospace, naval structures, rocket and missile technology, defense and war appliances etc. are always needed the smart or intelligent structural materials in their fabrication.

Laminated composite structures, with embedded piezoelectric actuators and sensors combines some of the superior mechanical properties of composites with the additional capabilities to sense deformations and stress states and to adapt their response accordingly. Piezo-laminates as smart-intelligent composites offer great potential for active control of advanced aerospace, nuclear, and automotive structural applications. Kant and Swaminathan [2002] are presented analytical solutions for the static analysis of laminated composite and sandwich plates based on a higher order refined theory. Shiyekar S. M., Tarun Kant [2011] are cosnsidered the higher order shear deformation effects on analysis of laminates with piezoelectric fiber reinforced composite actuators**.** P. Hemavathi, P. Veera Sanjeeva Kumar [2017] has investigated the Bending Analysis of Smart Composite Laminated Plates Subjected To Electro-Mechanical Loading Using HOSDT". Raju P.R., J. Suresh Kumar [2014] are presented a

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SURVEILLANCE OF THE UNATTENDED BAGGAGE AND BACKTRACKING VERIFICATION OF THE OWNER

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Abstract— This paper designs an off the shell surveillance system which tracks, detects, categorizes the unattended objects (generally termed as abandoned object detection) in the scene using state-of-the-art computer vision technique. A much popular time efficient background subtraction algorithm GMM is used by this paper to generate long term and short rm foreground models. The spatial and temporal aspects are utilized a to reduce the percentages of false alarms. Also provides an efficient back tracking verification of the owner for the further inspections. . On spotting the emergent scenario, the hardware part (ARM 7 microcontroller, a buzzer and GSM) alerts the public by raising an alarm .This surveillance system has been tested using the standard datasets. Subsequent reduction in false alarm rate has been noticed.

Index Terms— Abandoned object detection; temporal consistency; background subtraction; object tracking; visual surveillance;

I. INTRODUCTION

The traditional surveillance systems need a human operator to handle them. Moreover, the number of cameras and the area under the surveillance are restricted by the availability of man power. To overcome the limitations of raditional surveillance methods, a major effort is under way in the computer vision and artificial intelligence community to develop automated systems for the real-time monitoring of people, vehicles, and other objects. In the visual surveillance research, detecting abandoned or unattended luggage is referred to as the problem of abandoned-object Or. left-luggage detection .The image segmentation [background/foreground extraction] using background subtraction methods is used to address the problem. The static foregrounds for a period of time are recognized and semantic analysis is done.

A voracious academic research addressing the task of robustly recognising unattended baggage in public spaces is going on. The paper by Bayona et.al [3] brings an exclusive survey of the papers [4] [5][6][7][8]used for the object detection. Mainly, classified the entire object detection models into single and dual foreground [frame by frame, sub sampling]. The earlier model requires much work while tracking where as the latter requires a detailed analysis of the foreground mask for abandoned or removed object detection. Also MMGA with RTDENN [9] a light weight, time efficient algorithm combination of Real Time Dynamic Elliptic Neural Network and MGM for the segmentation of background and foreground has been worked out to address the challenges in the embedded environment. A survey paper written by T.Boumann et.al [10] covers an extensive inspection of all the papers working on background subtraction and provides a detailed understanding of the strengths and weakness of all the research papers available. Also it covers and analyzes extensively about the datasets available for the background subtraction. The paper classifies the modelling into traditional and recent models. Also provides a relative statistical analysis of the performance evaluation metrics over the models. So a glimpse of the rankings of the various models on hand for researchers, even in the case of the hybrid models for background subtraction or change detection.

The input to the object tracking module is the output of the background subtraction, generally a fore ground mask. The tracking and semantic analysis depends on the representation of the object, selection of image features, and modelling of the object appearance and motion. The tracking of unattended baggage is usually incorporated in the event detection algorithm. Kalman Filter (KF) and Unscented Kalman Filter (UKF) are utilized to track the foreground objects including human and carried luggage [11].Liao et al. [13] uses the features of skin colour and contour matching with Hough transform for tracking. Lv et al. [12] used a combination of the KF-based blob tracker and a human detector and had a more reliable tracking result .However these tracking approaches fail in the overcrowded scenes, where cast shadows prevent proper segmentation.

II. PROPOSED WORK

This paper uses a temporal consistency added dual foreground approach for the static foreground detection (termed here after as BGS –T).The long term and the short term foreground masks for the single camera based surveillance system are modelled using much popular algorithm Extended Gaussian Mixture Models (EGMM),

Indoor localization Via Neural Networks and Wi-Fi Signal

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Abstract:

Receiver localization indoors is the key element of Location Based Services (LBS) creation for wireless applications nowadays. Estimating the exact location is the key factor. Specific spatial estimation methods, such as Angle of Arrival, Time of Arrival have certain localization limitations. Indoor localization schemes based on received signal strength(RSS) may also be used to estimate receiver position. In this paper Neural Network based algorithms such as Nonlinear Autoregressive (NAR) and Nonlinear Autoregressive with External Input form (NARX) have been used to estimate the receiver's location in KLEF Library Block, Vaddeswaram, India. From our results it is clear that NARX forms better than NAR. For NARX the effective location rate is about 0.35 and the standard positional error deviation is also small.

Key words: Indoor Localization, GPS, RSS, MLNN, NAR, NARX.

1.Introduction:

Location Based Services (LBS) are being revolutionized as part of the wireless communications systems current and future generations. Global Positioning Systems (GPS) act as the primary device for various wireless technologies. In indoor environment scenarios the GPS positional accuracy is limited[1,2]. So it is very much needed to provide cheap LBS services with alternative GPS options. For position estimate, the obtained signal strength (RSS), fingerprinting, time of arrival (TOA) and angle of arrival (AOA)[3-6] may be used. RSS measurements are the key elements of location estimation techniques and can be translated to distance and in effect to position without any wireless device hardware modification[7, 8]. Estimation techniques based on RSS position can be divided into either propagation based models or traditional finger printing methods. The positional accuracy of the propagation models depends on pathloss model selection and features of the radio channels. The methods of finger printing are very good for location. Online RSS Map and off line RSS Maps will be used for position identification in this process. Finger printing system is stated to provide better estimate of position compared to propagation based models. Finger printing methods however require a high degree of computational complexity. Investigation of Euclidean distance fingerprinting of the region stored in the database returns a sample signal power and offline RSS data[11]. A Cramer-Rao Lower Bound (CRLB) is established which consists of the signal power and frequency of the transmitter[12] to improve the localisation efficiency. The localisation problem is to boost the fluctuation of the transmitted signal strengths by using a novel approach, where the robust signal function is extracted using IEEE 802.11 MAC software[13]. The Neural network with one hidden layer has been implemented for position estimation most cases[15], where input involves data handling methods and location accuracy has not been satisfactory. Therefore, two combined techniques can be applied to improve location performance, they are non-supervised clustering and majority voting committees of artificial neural network back-propagation[16]. Visual classification[18] and audio recognition[19] display the benefits of multi-layer neural network (MLNN). In this paper, the location technique based on RSS is implemented using MLNN which consists of transforming RSS signal, denouncing raw data, and locating unknown nodes[20]. To enhance MLNN's position accuracy a boosting approach is introduced. This method requires a database, i.e., offline map of the RSS and its positions. The database is used to train the MLNN to get all of the parameters of the network. The wireless channels are unstable, so high localization accuracy is very difficult, so a multi-layer neural network (MLNN)[21] is used without taking the pathloss model into consideration.

2. Methodology

Neural networks are essentially node sets. The general architecture of the Neural network is as shown at fig.1. The first layer is the input layer which trains the system for series of input samples. The second layer is the secret layer, where many machine learning algorithms are used to train the given input samples. The last layer is the output layer where we get feedback based on the sample that is being trained in the hidden layer in relation to the specified data. The calculated RSS samples will be given at the input layer so that the position can be predicted as output learned.

COLLECTIVE ELECTRO ENCEPHALO GRAPH SIGNALS BY MEANS OF WAVELET TRANSFORMS

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Abstract : This examination portrays the utilization of back spread Neural Network as an order and Discrete Wavelet Transformation for highlight extraction by taking vitality esteems on each sub-band of the Electro Encephalo Graph (EEG) signal wave. The reason for this examination was to distinguish the EEG signal utilized in the cursor development. The point of this investigation was to give new correspondence and control alternatives for individuals with serious engine inability. The information utilized are EEG information got from BCI rivalry 2003 (BCI Competition 2003). This information contains class 0 information (for upward cursor development) and class 1 (for descending cursor development). Dynamic is done in two phases. In the principal organize, the vitality esteems in each discrete wavelet sub-band are utilized to extricate highlights of the EEG signal information. This element is as the contribution on back engendering Neural Network. The subsequent stage is distinguishing process into two classes (class 0 and class 1) of EEG signal information records. There are 260 preparing information records of EEG signs and 293 of the EEG signal information document testing, so the all-out is 553 information records of EEG signals.

Keywords: BCI, Wavelet Transform, EEG, DWT.

I. INTRODUCTION

To move a cursor on the PC screen, somebody typically needs a console or mouse to run it. This is preposterous with somebody who doesn't have a hand or somebody who can move his hand. At first, it might be simply unrealistic reasoning, notwithstanding, the innovative and progressive thoughts of specialists both neighborhood and outside ones to have the option to move the cursor without utilizing the hands consistently show up.

Hans Berger was a German analyst, in 1929 he guaranteed the presence of a feeble electrical flows produced by the account of the cerebrum without opening the mind. The aftereffects of cerebrum recording can be painted on a paper. He named the mind recording with Electroencephalography (EEG), so it can associate the cerebrum and the article, which is being constrained by the idea by utilizing a device called Brain Computer Interface (BCI). BCI is a framework that can break down and procure neural signs to make a correspondence channel between the PC and the mind. BCI can be molded into frameworks gave by human muscles [1]. With BCI, somebody can make an order to an electronic gadget utilizing the cerebrum [2]. Playing a straightforward game should likewise be possible with BCI a by framework [3].

A few investigations take tests of information dependent on informational collections from BCI Competition 2003 - Data Set It (EEG signal information to move the cursor all over constrained by the human brain). Among them were Mensh, BD, Werfel, J, Seung, HS, in 2004. Their information comprised of four channels and four highlights (two of the normal of the SPC and two of the gamma band power). The aftereffects of the characterization procedure were 88.7% [4].

Consequent research was by Wang et al. [5] in 2005. Analysts utilized two channels and four highlights by joining moderate cortical possibilities (SCPs) and wavelet bundle changes. The aftereffects of the order procedure is 91.47% [5]. Different specialists were Ting et al. [6] in 2007, in which, the exploration they led were utilizing six channels and took seventeen highlights with neural system as a characterization procedure.

The aftereffect of the order procedure is 90.80% [6]. In 2005, Sun and Zhang[7] utilized the 2003 challenge examine information utilizing six highlights and utilized seven highlights, to be specific RMS, phantom centroid, transmission capacity, zero intersection rate, otherworldly move off recurrence, band vitality proportion and delta range size with Bayesian as a characterization procedure. The aftereffect of the arrangement procedure is 90.44% [7]. In 2010, Kayikcioglu and Aydemir [8], what's more, utilized BCI 2003 challenge information utilizing one (channel 1) as exploratory information and took 2 highlights utilizing polynomial fitting technique by taking element of h worth and b coefficient with KNN as the characterization procedure. The consequence of the arrangement procedure is 92.15% [8].

Prochazka et al. [9] exhibited the division for EEG signal and broke down utilizing symphonious wavelet change with the EEG signal element extraction utilizing the wavelet technique. Numerous analysts utilized the wavelet technique for EEG signal element extraction. Hence, there is an element for a size of 1, 2 and 3, which incorporates three recurrence groups with various time sizes of goals [9]. Breaking down EEG signal chronicle against epileptic patients utilizing wavelet change [10] is finished by taking the estimation of the base, most extreme, normal and middle of wavelet changes for highlight extraction of EEG signals against the epilepsy illness [11].

This examination introduced another methodology dependent on Artificial Neural Networks (ANN). This can be utilized for ordering cursor developments. The sign preparing strategy utilizing the Wavelet highlight presents Transform EEG signs to move the cursor up or down on the PC screen while (simultaneously) the SCP is recorded. ANN are utilized to order cursor developments when vitality as highlights recovered from a sub-band Wavelet Transform is utilized as information.

An overview of reference architecture model in IEEE 802.15.4 communication protocols

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Abstract: The efficiency of communication in the day today life is getting smarter and smarter. We must upgrade the communication tools as well as the protocols associated with it to produce an optima environment. To give a reference model for the stakeholders who designs, test and uses this service we are analyzing the parameters and functional components that plays a major role in the communication platform. The functional components form the functional groups, which provides various services and schemes to the end user application as well as the control management. This paper analyses the functional groups, functional components and the information transformation in the protocols especially in the Bluetooth enabled communication. In addition, the even driven scenarios are also discussed.

Keywords: - Functional component, Functional group, IEEE 802.15.4, Reference Model.

I. INTRODUCTION

The communication protocols that dealt with the multiple layer architecture and the analysis we made here are the subset of the previously provided cases. Since, the protocols we analyzed here is an ergonomic scheme that initiates the distribution in the real-time environment. The process of transferring this information within the functional groups as well as the functional components are a hectic task.

There are several parameters we need to consider providing a better solution to all the queries. When the virtual identity provided by the user and the raised query are mutually matched, then the system must search for the relevant query, and it should notify the user for the corresponding subscription. Therefore, the two main flow of transfer between the devices to the application as well as the application to the actuators needed to be configured. The communication technologies that are available with the network is called as the system level layered protocols and that are already available in the resource components.

II.Related Works

Several literatures work that are already stated the necessary of the efficient Bluetooth architecture. The need for placing the functional components in the optimal functional group makes the system more efficient and reliable in most cases. This section discusses some of the literature that are already provided some optimal solutions to the stakeholders regarding the designing, analysis as well as reuse of the optimal resources.

Kardach et al, provided architecture overview that performs most of the complex task in a much efficient manner. It efficiently [1] uses the functional component in the functional groups such that the overhead among the process modelling group and the execution may behave more efficiently.

Bruno et al, provided a scheduling protocol to manage the overall communication overhead in the scheduled communication. Such that the models with various functional components associated with the values of their identity in the virtual entity [2]. The resolution provided by the virtual entity and the management process should give a proper execution platform that has been discussed in this article.

Baniukevic et al provided hybrid architecture that provision the location as well as the architecture-based orientation of the simulation environment. Thus, provided a routing model to actuate the environmental parameters as well as the overheads affected by the system [3]. Therefore, the processing component and the computational complexity provided by the system is less when compared to the available protocols.

Haartsen et al. delivered a sigmobile [4] based architecture that follows a nominal rate as well as the visionary parameters for the avoidance of all the network-based scenarios. The communication protocol that experiences the delay as well as the throughput of any singular as well as the modeled arithmetic computations shows the linear progression among the networking platform.

Träskbäck et al discussed the analytical model of the theory that provides the actual technological overview and the communication mechanism and standards [5] that are available over the decade when the bluetooth communication was the only short range and the low powered protocol available at that time.

Another literature that deals with the connectivity and the communication of the protocols that is having the configuration functional component [5-7] as well as the security functional component. Such that the mechanism of the trust and the reputation scheme should comply with the authentication as well as the authorization functions components of the system.

The multiple variable scheduling and the algorithmic pattern that are needed for the manipulation of the standard communication scheme is provided and the probabilistic model for the overhead distribution are discussed [8, 10. 12].Chan 2004 and Beg 2002 distinguished between the distributed access points of the antenna in the linear as well as the spatial domain [9, 11, 13-15]. The survey has a completely unique

A NOVAL TRAFFIC MANAGEMENT SYSTEM USING IOT AND RASPBERRY PI 3 MICROCONTROLLER

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Abstract— The existing Traffic control system is based on the "time" which is already assigned in the system. According to these times the signals are working in each lane. But in these system condition is occurs as all vehicles in lane(L1) are passed and vehicles in another lane (L2) still in waiting state because time is not over and hence signal is still red. These systems are very inefficient because they are unable to handle various simple situations which are occurs throughout the day. Major drawback is it has unnecessary waiting time and there is no facility to handle emergency vehicles. The project is designed to develop a system which performs execution based on density of vehicles (Vehicle Count). After calculating the number of vehicles we will came to know in which side the density is high based on which signals will be allotted for a particular side. Raspberry pi is used as a microcontroller which provides the signal timing based on the traffic density. Raspberry pi directly uploads the Traffic status to the server by using Ethernet connection or Wi-Fi connection. The end user access this data by using GUI designed for specific application. By using webcam it captures the traffic Congestion and emails it to the predefined user.

Index Terms—Traffic Management system, Raspberry pi 3, iot, Automation.

I. INTRODUCTION

India is the second most populous country in the world and is a fast growing economy. Infrastructure growth is slow as compared to the growth in number of vehicles, due to space and cost constraint. Also, Indian traffic is non-lane based and chaotisic. In traffic environments, traffic sign recognition (TSR) is used to regulate traffic signs, warn the driver, and command or prohibit certain actions. Technologies like ZigBee, RFID and GSM can be used in existing traffic control system to provide cost effective solutions. Traffic jams may arise due to large red light delays which are hard corded and is independent of traffic.

TRAFFIC flow monitoring and analysis has been active research and engineering topic for more than two decades. Main information acquired from traffic flow monitoring includes: traffic volume, vehicle type identification (bike, car, light van, truck) and vehicle speed. Traffic volume data is used for a variety of purposes including historical trend analysis, forecasting, planning for future infrastructure improvements and expansions. Whereas transport remains the largest producer of CO emissions in EU, traffic monitoring becomes important also from the environmental point of view. Also the World Health Organization has officially decreed that inhaling diesel fumes can cause lung cancer and puts diesel plumes in the same category as arsenic, strontium-90 and neutron radiation. This has given traffic monitoring significant importance. Other traffic data parameters, such as speed and vehicle classification, are becoming more important as a measure of traffic safety and roadway pavement use.

Recent traffic flow analysis systems are able to perform vehicle number plate recognition which can provide information about main ways of traffic flow through cities and can help to optimize road infrastructure. Collecting this data can be done using a variety of different technologies. Traffic detection technology methods scoring biggest interest in this area includes: Doppler radar (measures the relative velocity of an object moving through its target range), magnetometer sensors (detects vehicles based on the disruption of the Earth's magnetic field by metal vehicles), video camera (processes images using sophisticated computer algorithms), side-fire radar (side-fire beams placed along a roadway reflect back to the sensor to detect vehicles), pneumatic tubes (transmits information to a counting device after a pulse is created when vehicles drive over a tube).

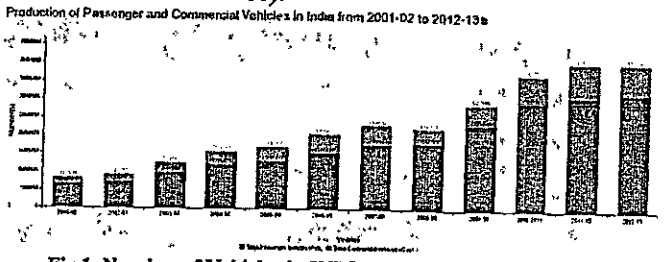

Fig 1. Number of Vehicles in INDIA from 2001-02 to 2012-13.

The above statistics shows that automobile usage in India increased significantly after the liberalization of the Indian Economy. Particularly, Automobile Production has increased by leaps and bounds during 2001-02 to 2012-13. India is the one of the largest producers of automobiles in the world. In

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Design and Simulation of Low Power Consuming Digital Controlled Oscillator in All Digital Phase Locked Loop

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Abstract:Recent IC technology innovations can achieve lowpowe r biomedical implant functionality.RF transceivers require low-power and small-sized components in biomedical implants to achieve the best results in frequency and phase control. Phase Locked Loop (PLL) is the key component for controlling these parameters in low power consumption RF transceivers. Therefore All Digital Phase Locked Loop (ADPLL) is chipping effectively into a major role in the fields of Biomedical & Communication. ADPLLs contribute better results in these areas due to their efficient blocks. This paper focuses on the design of low-power Digital Controlled Oscillator (DCO) and provides information on the various ADPLL blocks. To reduce power dissipation DCO is designed with XNOR gate using delay elements by avoiding direct contact between VDD & GND and the MOS transistors were arranged in ring topology. Tanner tools were used to design and simulation. In addition to this it also provides the detailed history of PLLs & ADPLLs and their mathematical analysis. Compared to previous design, the current DCO design gives better power consumption results.

Keywords: PLL, ADPLL, DCO, XNOR.

I. INTRODUCTION

From the past decade the usage of biomedical implantable devices is enormously increasing because of their flexibility in monitoring and caring the dear ones. This is due to the improvements achieved by the technologies in nanotechnology and wireless technologies. These made the medical diagnosis, monitoring and intervention into personal care in the form of e-care, m-health, self-care and Internet of Things (IOTS) [1]. For happening of all these cases, the implantable Devices (IMD) has to be inserting safely & securely to stay in the body over a period of time; thus it raises a new expectation for IMDs that the implant need to communicate between body parts and external units for a real-time sensing and treatments. To achieve all these facilities IMDs need a sufficient power source. To power IMDs there are several approaches, this can be majorly divided into two types. They are independent systems like battery approach to power IMDs and another one is System with a transferring mechanism or System with a external unit like inductive coupling [1, 2].

Biomedical radio frequency (RF) transceivers require itsy-bitsy forms with a minimum battery usage and energy efficient [3]. These forms of implantable devices are more preferable for high biocompatibility applications [4]. Signal propagation frequency in the human body lies in the "Medical Implant Communication Service (MICS) band frequencies" ranging from 401 to 406 MHz (intra range is 402 to 405 MHz) and facilitates a happy medium between chip-size and power consumption. So MICS band frequencies are widely used for biomedical RF transceivers [5, 6]. Designing of RF transceivers front-end in biomedical implantable devices is a tough task because they require extremely subjacent power devouring, tiny in size, itty-bitty external components and high fidelity devices. Usage of few additional components offers higher fidelity, low cost, and small size for medical implantable devices. The front end schematic diagram of biomedical RF transceiver in medical implantable devices is shown in Fig 1.The working details of this block diagram given in the study of ADPLL in Biomedical RF transceivers [4]. The performance of Fig 1 depends on local oscillator (LO) signal, so Frequency synthesizer is one of the critical blocks in RF front-end part of medical implantable devices. Hence there is a need for best frequency synthesizing in RF front end part which can be achieved from PLL.

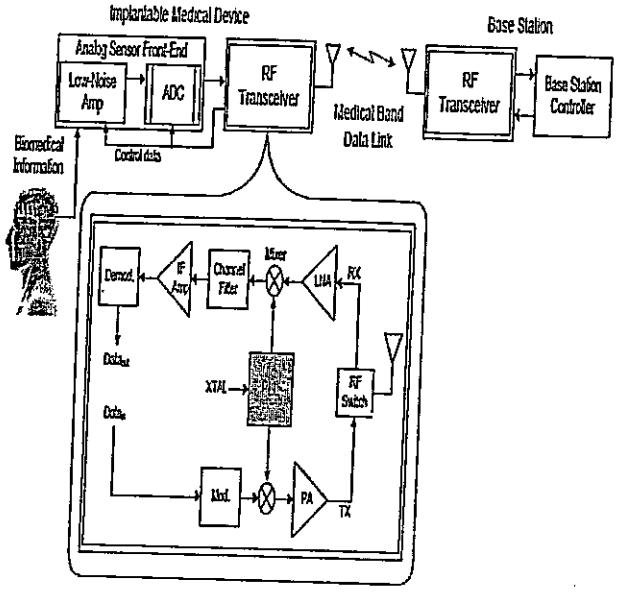

Fig 1: Schematic representation of RF front-end transceiver in medical implantable devices

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An PSO-SFLA Based Ensemble Link Weighted Triple Quality Algorithm to Improve the Performance of Clustering over Categorical Data Clustering

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Abstract

This paper focus on solving the issues related to the occurrence of irrelevant and null information during cluster partitioning. Hence, to avoid the serious issue arising due to such improper dataset, the proposed method uses a link based cluster ensemble technique uses weighted triple quality and multi-view point using entropy and similarity measurement, respectively. It ensembles the objects into clusters by suitably eliminating the local optimal problem and the quality of clustering is improved by reducing the high dimensional datasets. The clustering is performed using hybrid particle Swarm Optimization (PSO) - Shuffled Frog Leaping Algorithm (SFLA) algorithm. The proposed method is evaluated on categorical datasets to test its effectiveness in terms of Clustering Accuracy (CA), Normalized Mutual Information (NMI) and Adjusted Rank Indices (ARI). The results shows that the proposed approach attains better finalized clusters than the other conventional methods.

Keywords: Bipartite Spectral Algorithm, Entropy Weighted Triple Quality, PSO-SFLA, Multiview point similarity measure.

1. Introduction

The data clustering the basic element to structure the unstructured data using cluster analysis, which discovers the essential objects from the unlabeled data. The possibility of attaining high quality clusters is high, when the clustering algorithm maximizes the intra-cluster similarity and minimizes the inter-cluster similarity. The need to obtain high quality clusters is been achieved through data mining, pattern recognition, machine learning and meta-heuristic evolutionary algorithms.

In recent years, the development of clustering algorithm has increased over the numerical data [1]. There are several clustering algorithms available in literatures to cluster the categorical data which includes: Cluster ensemble framework with Group method of data handling (GMDH) [2], CHAMELEON [3], Ensemble Weiszfeld algorithm [4], plurality voting-based consensus function [5], Fuzzy Weighted Locally Adaptive Clustering (FWLAC) [6], combinatorial optimization problem [7], Hierarchical Cluster Ensemble Selection [8], (self-organizing maps (SOM) and *k*-means with cluster-based similarity partitioning algorithm (CSPA), hypergraph partitioning algorithm (HGPA), and majority voting [9], hierarchical cluster ensemble model based on knowledge granulation [10], Clustering Algorithms Independency Language [11], incremental

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Classification of Landsat-8 Imagery Based On Pca And Ndvi Methods

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Abstract: *Remote sensing is an important issue in satellite image classification. In developing a significant sustainable system in agriculture farming, the major concern for remote sensing applications is the crop classification mechanism. The other important application in remote sensing is urban classification which gives the information about houses, roads, buildings, vegetation etc. A superior indicator for the presence of vegetation can be computed from the vegetation indices of a satellite image. This indicator supports in describing the health of vegetation through the image attributes like greenness and density. The other parameter in detecting objects or region of interest is an image is the texture. A satellite image contains spectral information and can be represented by more spectral bands and classification is very tough task. Generally, Classification of individual pixels in satellite images is based on the spectral information. In this research paper Principle component analysis and combination of PCA and NDVI classification methods are applied on Landsat-8 images. These images are acquired from USGS. The performance of these methods is compared in statistical parameters such as Kappa coefficient, overall accuracy, user's accuracy, precision accuracy and F1 accuracy. In this work existing method is PCA and proposed method is PCA+NDVI. Experimental results shows that the proposed method has better statistical values compared to existing method.*

Keywords: *Classification, Kappa coefficient, Multispectral images, NDVI, PCA.*

I. INTRODUCTION

Remote sensing is the art of science obtaining and analyzing information about phenomenon, area or object using a physical device without a physical contact. It provides constant and tedious view of the earth surface.[1]. It offers a reliable and repetitive perspective of the earth's surface. Satellite imagery classification plays a significant role in many remote sensing applications. It is a technique by which, based on their spectral features, labels or class identifiers are connected to the pixels that making up remotely sensed images. These features are usually spectral reaction measurements in various wavebands. They also contain other attributes like vegetation. Remote sensing spectral vegetation indicators have been commonly used to assess and analyze biomass, water, and plants. Vegetation indices (VI) enhance spectral information and increase interest class separability, thus influencing the quality of information obtained from remote sensed data. Analysis of remotely sensed data can be distinguished by three factors [2-3].They are

1. Remote sensed images give a panoramic overview
2. Remote sensing images use the electromagnetic spectrum's visible and infra red regions.
3. They can describe the earth's surface at different resolutions.

Remote sensing images may contain spectral and spatial information of the objects. Object classification is performed through the spectral analysis of the reflected or emitted by radiant energy of the target [4].In this paper a dynamic approach is used for the classification of satellite image.

The paper is organized as follows section II describes the methodology of the research work and section III presents the experimental results and discussions .Conclusion of the research work is outlined in section IV.

II. PROPOSED METHODOLOGY

A. Data Set: In this work Kalahasti area from Chittoor district in Andhra Pradesh is used for image classification. The satellite images are acquired from United States geological survey (USGS). The collected images are LANDSAT 8 OLI (operational Land imagery).Table 1 gives the characteristics of LANDSAT 8 OLI. In this work band 4 and band 5 are used for classification and they provide good accuracy when compared to other spectral bands. Region of interest (ROI) extracted from 143/50 row path. In this work ROI is Kalahasti. To extract desired area raster clip and shape file is applied on the satellite image.

Table 1.Landsat 8 OLI characteristics

Image acquisition Date	05-08-2018
Path Row	143/50
Datum	WGS 84
Projection	UTM
Spatial Resolution	30m
File format	Geo-Tiff
Number of Bands	11
Sensor Type	Operational Land Imager
RadiometricResolution	16 bits
Temporal Resolution	6days
Swath	190km

The band designations of Landsat 8 are shown in Table 2.

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Development of Qualitative Model for Detection of Lung Cancer using Optimization

C Venkatesh, Polaiah Bojja

Abstract: As of late, expectation of cancer at prior stages is mandatory to increase the opportunity of survival of the harassed. The most appalling sort is lung cancer, which is most common malady these days. So to dispose of it a detection framework is proposed. The objective of this paper is to investigate a practical segmentation algorithm with optimization system for therapeutic images to abridge the doctors' understanding of CT images. Recent medicinal imaging modalities produce enormous images that are incredibly terrible to examine physically. The outcomes of segmentation algorithm depend on the exactitude and intermingling time. In this paper, a qualitative detection model is proposed to partition the CT images of lung cancer. The detection framework shaped the obtained therapeutic images of lung CT images. To begin with, in pre-processing stage the median filter is utilized for noise reduction and smoothing. Later Otsu's segmentation is applied to separate locale of enthusiasm from lung cancer images along with particle swarm optimization to get more accuracy and also for feature extraction LBP is connected. Here, the proposed model is framed by utilizing SVM technique for classification. Using MATLAB, simulation results are obtained for cancer detection system and these results are compared with other optimization techniques.

Index Terms: Modalities, Framework, Detection, SVM, LBP and Otsu's.

I. INTRODUCTION

Cancer identifies with abnormal cell development anyplace in the body, having a tendency to multiply in an uncontrolled way [1]. Numerous cancers and the irregular cells that make up it are additionally perceived by the tissue name that the strange cells start from pulmonary cancer, breast cancer, prostate cancer, colon cancer and so forth. Lung cancer is the world's leading reason for death [2]. A CT thorax scan is commonly the most delicate approach to detect lung lesions and encompassing structures. A CT scan is an effortless, non-intrusive imaging technique that makes accurate numerous pictures (cuts) of body structures, similar to the lungs [3]. Various artifacts can reconfigure the cross-sectional pictures which are produced during a CT scan. The National Lung Screening Study (NLST) exhibited a relative hazard reduction of 20% in lung cancer-explicit mortality and 6.7% taking all things together reason mortality utilizing low-portion CT screening [4]. A lung lesion is a round nodule of under 3 cm in width. It could be either benign (non-cancerous) or malignant (cancerous) and could be detected in 1 out of each 100 chest scans. In a CT scan, lung cancer is distinguished as round white nodule sores, accordingly it is noteworthy for screening and demonstrative contemplations to detect and group those lesions. The likelihood of annodule getting to be cancerous is about 40%, however the hazard changes extraordinarily relying upon a few contemplations. For example, in individuals under 35 years old, the likelihood of a lung sore getting to be cancerous is under 1%, while in individuals over half of the lung knobs are threatening (cancerous) [5]. The radiologists ought to dependably contrast the present CT scan and the past ones when a lesion is detected on a CT scan. In the event that the size, shape or presence of the nodule on prior CT scans has not transformed, it is likely not cancerous. In the event that a lung nodule is new or has changed in size, shape or appearance, at that point it is exhorted that a bronchoscopy or tissue biopsy decides whether it is cancerous. Because of the high number of scans which are regularly overseen and broke down, the possibility of accurate evaluation from CT scans requires a ton of exertion from the pros. The appraisal turns out to be increasingly convoluted when the movement of the illness isn't yet outwardly significant (early stage)[6]. The strategy for examining a CT scan to detect lung knobs takes around 15 to 20 minutes for the radiologist. The radiologist for the most part assesses at any rate 45 pictures around the same time, and this could be an exhausting technique. Distinct restorative outcomes would thus be able to be gotten for a similar scan by various specialists. In this paper, the work is focused on creating modern enhancement based lung cancer detection procedure that would be valuable in helping radiologists as a subsequent feeling to characterize lung lesions and decrease the time of the CT scan appraisal. For the radiologist, lung nodules are regularly accidentally perceived in a CT scan since they are not wide enough to see it effectively. The nodules were depicted in this paper by computing the boundary highlights acquired from the Local binary Pattern (LBP) by utilizing a spiral based SVM to order CT pictures into two classifications: cancerous aspiratory lesions and lung lesions.

II. LITERATURE REVIEW

K.Senthil Kumar et al.[7] in 2019 suggested a lung cancer identification system using GCPSO . Multiple optimization techniques are also used in this work for identification of cancer in CT images. By this method 95 percent precision is acquired. Preethijoon et al.[8] in 2019 suggested a pulmonary cancer detection arrangement using fuzzy c — mean and k-mean clustering

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IMPLEMENTATION OF MATRIX-VECTOR MULTIPLICATION METHOD ON FPGA USING XILINX SYSTEM GENERATOR

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ABSTRACT- **Matrix multiplication is the kernel operation used in many image and signal processing applications. In diverse domains, the scientific applications requires severe computing algebra routines. The matrix multiplication presents an indispensable mathematical operation in many high performance fields. This paper presents a new FPGA design and implementation for matrix vector multiplication. The design has been implemented with Xilinx System Generator. The designs are optimized for speed which is the main requirement in these applications. First design involves computation of dense matrix vector multiplication which is used in image processing application. The design has been implemented on Virtex-4 FPGA and the performance is evaluated by computing the execution time on FPGA.**

I. INTRODUCTION

A reconfigurable system (RC) is a computer employing a field programmable gate array (FPGA) that can, by modifying its configuration, change the function of the digital circuits of which it is composed. This is unlike an application specific integrated circuits, which cannot be reconfigured after the ASIC is integrated into a system. In a RC system, software programs are used to interface with the FPGA after it is configured. Furthermore, RC systems give the ability to dynamically change their configuration with changing data sets and algorithm needs. Such flexibility is beneficial in order to support a variety of different user applications or support improvements in system features. By utilizing the reprogrammable nature of FPGA, a RC system enables easy re-design. Hence system functionality can be extended or modified, which reduces design time.

Recently, Field Programmable Gate Arrays (FPGAs) have become a platform of choice for hardware realization of computation-intensive applications. Especially, when the design at hand requires very high performance, designers can benefit from high density and high performance FPGAs instead of costly multicore Digital Signal Processing (DSP) systems. FPGAs enable a high degree of parallelism and can achieve orders of magnitude speedup over GPPs. This is as a result of the increasing embedded resources on FPGA. FPGA have the benefits of the hardware speed and the software flexibility; also they have a price/performance ratio much more favorable than Application Specific Integrated Circuits (ASICs). Since the major resources for implementing computation-intensive algorithms are embedded on FPGA, latency associated with device communication has been eliminated. However, these embedded resources are limited hence it is important to use these resources optimally. Recently, the evolution in multimedia and telecommunication depends on strong computationally algorithms.

The algebra routine of Matrix-Vector Multiplication (MVM) is essential in numerous scientific usages such as LU and linear system solvers. It is essential not only in theory, but also in applied domains. But, this operation is gourmand in memory space and the microprocessors can only achieve 10 to 20 percent of their peak floating point performance when performing matrix computations. The solution was to implement matrix multiplication (MM) on several hardware platforms to increase performances like speed up and accuracy in the realization of such operation. In literature, many authors worked on this routine by exploiting different platforms. First, in the work, the MM was implemented on a Digital Signal Processor (DSP) as a linear extended DSP program automatically engendered by a specially designed program.

This device had an easy access to the data memory and a good parallelism of the multifunction instructions. The unit responsible for multiplication and accumulation of the result is MAC and only the last summation must be shifted to a memory location. The method was applied to predictive vector quantization of Line Spectrum Frequencies vectors employed in speech coding. The gotten decrease in computational complication and fixed storage necessities was among two and three-fold. Whereas, in the work, new methods were explored to accomplish high performance on a floating-point DSP. This device possessed two elements capable to hurry the MM a software-managed memory hierarchy, and a direct memory

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Search

A COGNITIVE APPROACH BASED IMAGE THRESHOLDING SYSTEM FOR ANALYSIS OF IMAGES ASSOCIATED WITH DIABETIC MYONECROSIS

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Abstract

Diabetes Mellitus has grown to be a common disorder in all groups and ages of people throughout the world, mainly because of deskbound lifestyles and unusual eating habits. And it has become an intimidation as well as challenge to the researchers in scientific society to find a solution to control this problem. A little bit of awareness is required among the people to prevail over this disorder. The main concern for people with Diabetes is its related complications. In this paper research work dealt is about the design of cognitive system based on contrast parameter and simulation of images related to Diabetic Myonecrosis and the outcome results are used for analysis of the problem in various conditions of DM patient with Myonecrosis.

Keywords: Adaptive, diabetes mellitus, diabetic myonecrosis, disorder, enhancement, thresholding

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A Novel Approach for Lung Lesion Segmentation Using Optimization Technique

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Abstract
Cancer is the most prevalent high-flown disease in all countries. In all cancer types, lung cancer is the most mortal disease. Millions of people were die every year because of lung cancer. Early recognition of disease plays a protuberant role in cancer patients. Accurate prophecy of this disease swells up the survival rate. But accurate detection of lung cancer is very critical with the existing systems and also time consuming. To conquer this difficulty the hybrid method is proposed. Accessibility of present technology has proved the way to explore the genes and its alliances in a variety of ailments like lung cancer. In this paper, a hybrid approach is proposed where genetic optimization algorithm is used for detection of cancer in CT images along with SVM classification combined with novel feature selection technique. This method assists the doctors to discern the lung nodules perfectly at early stages.

Keywords
Optimization; Alliances; Classification; Cancer; Nodules

Introduction

Cancer is the most dangerous disease concerning with abnormal growth of cells. These cells grow up uncontrollably and form as malignant tumors. These tumors spread and affect the organs within the body. Out of all the cancer diseases lung Cancer is utmost perilous diseases that cause a great number of fatalities in both men and women and also it has been recognized as a major health problem in worldwide[1]. According to ACS (American cancer Society), in the year 2018 approximately 14% are lung cancer out of all cancer types [2]. In 2014, lung cancer causes 1.6 million deaths annually and estimates that by 2030 it will attain just about 10 million deaths per year [3]. Early diagnosis of this disease can avert the spread of cancer, fetches better treatment and increases the endurance rate. However, the computed tomography (CT) imaging modality is used to screen the lung cancer. CT scan forms several slices (detailed images) of lung [3]. Moreover, to diagnose lung cancer still manual methods are used in clinical practices which are not as much as effective for radiologists and pathologists.

Therefore, an effective cancer detection system based on image processing is of great interest for evaluating larger dimensional medical data related to disease. Image processing technology is a dynamic diagnostic tool for medical purposes and has been developed very much to investigate the fine details. So to detect lung cancer the image processing technology and efficient optimization techniques are essential.

In this paper a hybrid strategy is proposed to identify lung lesion effectively and exact. The proposed method employs genetic algorithm as a segmentation method that identifies genes (lung nodule) precisely, support vector machine for classification to classify whether the detected part is malignant or not and LBP feature extraction is used to the extract the features of lung cancer. In this work also compared the results of proposed system with DWT technique.

Literature Review

In 2019 Ananya Choudhury et.al [4] proposed a multi-objective algorithm using genetic for lung cancer segmentation. In this method multi-level thresholding is performed by genetic algorithm and for classification connected component technique is used. In this work they have calculated classification accuracy in terms of true positive and false negative but not segmentation accuracy.

In 2017 Ammar Odeh et.al [5] proposed a method early prediction system for lung cancer detection using genetic. In this work the authors obtained 84% accuracy.

In 2017 Kamil Dimililer et.al [6] proposed a strategy for lung lesion detection using DWT. In this method DWT (Haar) is used for segmentation and extracted 4 output different images which are represented in vertical, horizontal, diagonal and approximation. Finally all the images are processed through techniques like erosion and subtraction to extract the cancer area. By this method authors obtained 89% accuracy.

In 2016 Mukesh Chandra Arya et.al [7] proposed a method to detect mass tissues in Chest X-ray images using DWT. By this method authors obtained 86% accuracy.

In above two methods [6][7] authors used DWT as segmentation technique. With this technique they obtained less than 90% accuracy. The main drawback is that DWT does not extract fine edges correctly because of poor directionality also it does not provide complete information in all directions.

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Detection of Leucocytes in Microscopic Images with Swarm Intelligence Algorithm

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Abstract
Leukemia is a blood a cancer. It is also Known as Hematologic cancer. Leukemia is due to abnormal growth of blood cells by the bone marrow in human body. It normally affects the white blood cells (Leucocytes). This disease can be recognized and diagnosed by analyzing microscopic images. Generally blood cells are captured by microscopic images. Early detection of cancer increases the survival rate of the patient. To detect leukemia cells in blood smear hematologists finds difficulty and it is inaccurate and time consuming. So it requires fast and cost effective system to identify the disease. Image processing techniques are most useful for the analysis of microscopic images. These methods do not require special equipment for lab testing .Image processing techniques are fast and cheap. In this paper Image processing methods and optimization algorithms are used for the detection of leucocytes. ACO (Ant colony optimization) and PSO (Particle swarm optimization algorithm) are existing algorithms and a Cuckoo search Optimization algorithm is proposed method (CSO). By observing Statistical parameters the proposed method outperforms the existing methods. These results are obtained by simulating MATLAB software with I5 processor and 8GB RAM.

Keywords
Enhancement; Median Filter; Segmentation; Leukemia: Optimization

Introduction

As of late, Digital image processing is connected to numerous applications which incorporate in remote sensing, biomedical and so on. Specifically, imaging applications are rising as another open door for modernization at the meeting point among computer science and medicine. Image processing is valuable to remove significant data from medicinal images and enhances the diagnosis of Leukemia in patients [1]. Malignant cells can be detected by human look and it takes lot of time and inaccurate also .Image processing plays important step in providing the correct form of diagnosis.

Leukemia is the most dangerous disease, it can progress rapidly and if the patient not treated in time it may leads to fatal death within few months. Leukemia is mostly effects in children and adults. Generally majority malignancy cells start in body parts yet leukemia is the sort of disease which starts and develops in blood cells (1). Blood is essential substance without which metabolic elements of body is seriously influences. Bone marrow produces Blood cells. Blood cell comprises of three distinct kinds of cells such as WBC, RBC and Platelets. Erythrocytes (RBCs) are accountable for taking oxygen and CO2 away from tissues. There are three kinds of WBCs they are called as lymphocytes, monocytes, eosinophils, basophils and neutrophils [2-3]. Typically, leucocytes (WBCs) combat with the foreign bodies and keeps from contamination. Platelets help the coagulating of blood and controls hemorrhage (2)

In Human system cell grows and multiply into new cells. In cancer disease, the old cells are not perished and remains in the blood. So the newly generated cells can't have sufficient space to live and finally the functioning of blood distracts and generation of blood cells is irregular and uncontrolled [4].

In this work a novel method (Cuckoo Search algorithm) is proposed for the detection of cancerous (Malignant) cells accurately in microscopic medical images. Also in this work the obtained values from the proposed method are compared with the existing methods (ACO & PSO).

Literature Review

In 2017 DessaiVihangiHiren et.al [5] used fuzzy system for accurately separates the overlapped leukocytes (white blood cells) from blood samples. In Pre-Processing they have used morphological hole filling and contrast enhancement is used. In this work the author obtained segmentation accuracy of 94.07%.

In 2017 Afaftareef et.al [6] proposed watershed technique for segmentation of leukocytes (white blood cell). In pre-processing morphological operations are used for image enhancement.

In 2016 Jullendgetc et.al [7] used double thresholding and binary large objecy (BLOB) method for classification of blood cells. In this work they obtained sensitivity 84.43% and Specificity 85.5%.

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Computation of Parity Check Matrices for Binary EG-LDPC Codes used in Communication Systems

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Abstract
The Low Density Parity Check (LDPC) are direct codes, which are true block and Shannon Limit codes. These codes are attained least error floors of data bits for data transfer applications used in communication systems. However, the proposed LDPC codes are more beneficial than Turbo codes because of reduction in the decoding complexity and detection of the errors in less cycle time. This results the reduction of decoding time, low decoding latency, complexity and as well as least error floorings in communication, when the transmitted data contains multiple error bits. This paper is proposed to represent the majority logic decoding/detecting of LDPC codes. This paper proposes the Generation of Originator and Parity estimated matrices for the Binary LDPC Codes. Here, the proposed techniques are hard decision decrypting and soft decision decrypting schemes. These schemes uses majority logic decoding based on the data transmission and reception in communication channel. This paper also elaborates the effective calculation of Euclidean distance and algorithm for constructing the LDPC codes.

Keywords
LDPC Codes; BF Algorithms; EG-LDPC; Turbo Codes; Coding Theory.

Introduction

Correcting Error Codes

The terminated data or parity bits is auxiliary to the novel coded data, therefore that the exact coded data can be recovered at the destination end without the requirement for the data re-transmission and similarly the faults can be discovered and rectified, if any faults are existing. For this, we are using sophisticated codes, which are called error-correcting odes.

Shannon's Theorem:

For the consistent broadcasting of data over a given communication medium, the data transmission rate should not exceed the channel capacity, which is proved by Shannon theorem.

LDPC Codes:

LDPC codes are established by R.G. Gallagher, hence these are also identified as Gallagher codes. Due to unbearable practical comprehension, these codes are abandoned, although these codes were designed in the early 1960's. These LDPC codes are direct error improving codes and methodologies near Shannon capability. These LDPC codes are the better blunder improving codes, used for encoding and decoding at present scenario [1]-[3]. Here are binary categories of LDPC codes are of two types.

LDPC Regular Codes: Regular type of codes take equivalent row masses (Wr) and equivalent column masses (Wc) (Equivalent number of ones in rows and columns).

$$\text{Ex:} \begin{bmatrix} 1 & 0 & 0 & 1 & 0 & 1 \\ 0 & 1 & 0 & 1 & 1 & 0 \\ 0 & 1 & 1 & 0 & 0 & 1 \\ 1 & 0 & 1 & 0 & 1 & 0 \end{bmatrix}$$

Here $W_r = 3$ for all of the rows and $W_c = 2$ for all of the columns.

LDPC Irregular Codes: In these; all of the rows might have dissimilar masses ($Wr \neq$ constant) and all of the columns should have dissimilar masses ($Wc \neq$ constant). For example let us assume the following equivalence matrix which is having four number of rows and four number of columns. Generally, LDPC codes are having higher number of zeros than the ones. It can be considered in equivalence check matrix is as shown below.

$$\text{Ex:} \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}$$

If whole number of rows and columns in the above equivalence matrix comprise uniform amount of ones. Therefore, it can be named as Binary LDPC codes.

Various decoding algorithms have been established for decrypting of LDPC algorithms based on the following two schemes and they are

1) Hard Decision Decoding (HDD)
2) Soft Decision decoding schemes (SDD).

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A collaborative policy-based security scheme to enforce resource access controlling mechanism

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Abstract
Advances in both telecommunications and Information technology have improved the way users do business online. Android, an open-source mobile operating system, is becoming an attractive target for cyber criminals to exploit due to its predefined permission model. Without classification, the mobile operating system permits installation of mobile applications of all kinds, including Trojans, thus making its trustworthiness into question. In this paper, we present a security system called collaborative policy-based security scheme (CSS) that permits users to customize the access permissions of Android applications during runtime. The proposed CSS security scheme validates the trustworthiness of each application before being installed. The experimental results show that the proposed CSS successfully detects all malicious applications with a run-time overhead of 2.7%.

Keywords Android system security · Permission pattern · Security policy · Security profile · Resource access restriction

1 Introduction

A smartphone is a mobile device that is equipped with enhanced computing, and connection capabilities, and includes devices such as the iPhone by Apple, the Nexus by Google, the Windows phone from Microsoft and others. A notable feature of the Android Operating System (AOS) is its significant reliance on the Linux kernel. The heart of AOS is the Dalvik runtime system, which is responsible for the system-wide process manipulation and maintenance of the parent–child concept when launching a service or an application. Android implements an important security feature called an application sandbox through the Linux kernel. The AOS permits the installation of a mobile application within an isolated sandbox environment, to prevent unauthorized access to system resources during runtime. However, Android is not strong enough against mobile vulnerabilities, which have become a root cause of the failure of android application sandboxes. With increasing numbers of mobile users every year, malware writers have designed various forms of malware with the objective of compromising mobile devices [1, 2].

For example, one malicious mobile application known as, Gingerbreak, exploits Android 2.3 OS to gain root privileges and completely bypasses Android's sandbox environment. The malicious application then has the ability to exploit other vulnerabilities relating to the Linux kernel, such as inter-process communication. The intended goal of a malicious mobile application is to perform illicit activities such as stealing a user's private data, spying on the user's activities, and causing financial loss. The users may not be aware of the execution of a currently running malicious mobile application (m-app) on their smartphone, as in many cases, the malware is downloaded and/or installed without authorization. This actually poses serious security concerns when the standard security features offered by the developers are not sufficient to offer protection to users from such attacks.

Although developers may offer a policy mechanism to control access to the various important components of pre-

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A Machine Learning Based Decision Support System for Improvement of Smart Watering Equipment in Agricultural Fields

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Abstract: ***The new Paradiagram in the internet technology is Internet of Things, where anything that exists in the world can be connected to the internet with unique identity. It has major applications in the fields like health care, agricultural, retail and automation, etc., Here; we proposed a model for Decision Support System (DSS) which used in the Internet of Things (IoT) based agricultural application. It leverages the deep analytics of smart watering equipment data which was collected from the thing speak cloud platform and to improve the water usage and to develop the fields productions in the agricultural fields. The proposed model was evaluated empirically and demonstrated efficiency by using machine learning prediction model approaches. The proposed model was compared with other classifiers and the result shows the efficiency of the system.***

Index Terms: IoT, machine leaning, deep analytics, decision support system, agricultural fields, thing speak.

I. INTRODUCTION

ESM (electric smart meter) is the business expanding utility domain. It occupies large share compare to smart meter bases. Some of the shares of smart meter such as gas and water are growing day by day [1]. One of the important features of Internet of Things (IoT) technology is small amount of packet and a periodic packet transmission. The communication field of a wide area coverage based low speed transmission characteristics and low power is called Low Power Wide Area (LPWA). In further IoT environment is accuracy data of the data depend on optimized uplink period and power saving of IoT devices are most important [2].

In agricultural sector plays a major role in the economy, is quite untouched by IT industry. Food accessibility and availability can be increased by reducing the losses and increasing production. There are various constrains on increasing the production of food and increasing the agricultural land [3]. In 2020, the world will have connecting over 50 billion of IoT devices and also streaming over 60 ziga bytes of data. In data science is to uncover insights from colossal amount of IoT data due to its complex natures of data volume, velocity, variety and veracity [4].

Deep learning as a novel machine learning model, it utilizes the unsupervised or supervised method to learn and hierarchical features of the tasks of classification and pattern reorganization. CNN (convolutional neural network) is one of the most well-known deep learning model. CNN is a state of art performance in image classification and speech recognition [5]. Main objective of NB-IoT is increased coverage, low user equipment and long battery life, device complexity. Several techniques has adopted single tone transmission, phase rotated modulations, power spectra density boosting, including repetitions, to reduce peak-to-average power ratio in the uplink and so forth [6].

The scope of the technology day by day increased very potential to serve the some community better such as big players like Google, Intel, Face book, Amazon, Samsung, PTC and Flipkart etc. The vision of IoT is multiple technologies ranging from wireless communication and from embedded systems to MEMS (micro-electronic mechanical systems) and much new hackable hardware available in stores to start prototyping [7]. In everyday life IoT has recognized one of the important factors of smart home. It allows monitoring, controlling and managing house environment according to the house owner's lifestyle. It is mainly focuses on speed of communication, communication infrastructure, enhanced hardware development, cyber security and data transmission reliability. Machine learning is known to be fascinating technique for smart home. The functionality is to self-decision making incorporate with smart home energy management system [8].

Many integrated Internet of Thing integrated sensor technologies are used in different applications. Those are health monitoring, localization, human body activities, structural monitoring, and health monitoring. The integrated machine learning software and sensor hardware was several benefits such as (i) Providing real time analytics directly from the board, (ii) Reduce of sensor data traffic and potentially enhanced privacy by communicating parameters instead of raw data, (iii) enabling the sensor system to be continuously retrained and trained, and (iv) scalability in that the algorithms can also operate with attached heterogeneous sensors [9]. In everyday life development of AI (artificial intelligence) system was able to organize the human machine interactions such as communication, facial expression, voice recognition and biometric system etc. and also increase the popularity. Some of the most voices assistance are Amazon Echo which responds to the name of Alex from Amazon, Google Assistant from Google, Siri from Apple, Yandex from Alice and Cortana from Microsoft [10].

Today's world so many health issues related on strong stress correlation among them heart disease, stress and cancer some terminal illnesses.

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A Novel Learning Strategy for Credit Card Fraud Detection

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Abstract: Recognizing cheats in debit card exchanges is perhaps a standout amongst the best test beds for computational knowledge calculations. Indeed, this issue includes various important difficulties, to be specific: idea float (clients propensities develop and fraudsters change their systems after some time), class irregularity (certifiable exchanges far dwarf fakes) and confirmation inactivity (just a little arrangement of exchanges are opportune checked by examiners). In any case, by far most of learning calculations that have been proposed for extortion location, depends on assumptions that barely hold in a true Fraud Detection System (FDS). This absence of authenticity concerns two primary perspectives: I) the way and timing with which regulated data is given and ii) the measures used to survey extortion location execution. In this paper we are proposing a new learning strategy for detecting frauds in credit cards by using genetic algorithm.

Keywords : Credit Card Fraud Detection, Unbalanced Classifications, Concept Drift, Learning in non-stationary environments.

I.Introduction

Credit card misrepresentation discovery is a pertinent issue that draws the consideration of machine-learning and computational insight networks, where extensive numbers of programmed arrangements have been proposed [1], [6], [8], [23], [24]. Truth be told, this issue seems, by all accounts, to be especially testing from a learning perspective, since it is portrayed in the meantime by class irregularity [21], [22], in particular real exchanges far dwarf fakes, and idea float [4], specifically exchanges may change their factual properties after some time. These, be that as it may, are not by any means the only difficulties describing learning issues in a certifiable Fraud-Detection System (FDS).

In a genuine world FDS, the enormous stream of instalment re-missions is immediately examined via programmed devices that decide which exchanges to approve. Classifiers are regularly employed to dissect all the approved exchanges and alarm the most suspicious ones. Alarms are then assessed by expert specialists that contact the cardholders to decide the genuine nature (either real or fake) of each cautioned exchange. By doing this, specialists give an input to the framework as marked exchanges, which can be utilized to prepare or refresh the classifier, so as to protect (or in the end improve) the extortion location execution after some time. Most by far of exchanges can't be checked by examiners for clear time and cost imperatives. These exchanges stay unlabeled until clients find and report fakes, or until an adequate measure of time has passed with the end goal that non-debated exchanges are viewed as veritable.

The primary commitments of this paper are:

- We depict the components directing a genuine world FDS, and give a formal model of the verbalized classification issue to be tended to in extortion recognition.
- We present the execution estimates that are considered in a genuine world FDS.
- Within this sound and sensible model, we propose a viable learning system for tending to the above challenges, including the confirmation inertness and the alarm criticism communication. This learning procedure is tried on countless card exchanges.

The primary difficulties rising when preparing a classifier for misrepresentation location intentions are then examined and presents the proposed learning procedure, which comprises in independently preparing diverse classifiers from feed-backs and deferred managed tests, and after that accumulating their forecasts. This procedure, enlivened by the distinctive idea of inputs and postponed regulated examples, is appeared to be especially compelling in FDS utilizing sliding window or troupe of classifiers. We approve our cases in analyses on in excess of 75 million online business debit card exchanges procured more than three years, which are additionally investigated to watch the effect of class awkwardness and idea float in genuine exchange streams.

II.Real-World Fds

Here we depict the fundamental quirks and the working states of a genuine world FDS, propelled by the one routinely utilized by our modern accomplice. Figure represents the five layers of control ordinarily utilized in a FDS: i) the Terminal, ii) the Transaction Blocking Rules, iii) the Scoring Rules, iv) the Data Driven Model (DDM) and v) the Investigators. Layers i) - iv) completely execute programmed controls, while the layer v) is the just a single requiring human intercession.

Against THEFT PROTECTION FOR ATM BANKING USING IOT

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Abstract

We have a place with the edge of the digitized and shrewd world. Individuals are getting more intelligent step by step with the assistance of new innovation, new developments. The principal purpose for the up-degree of new advances is only to beat the current issues. Monetary development of world improves the existence more astute and when contrasted with the past way of life. A shrewd advance towards economy is the presentation of the Automated teller machine (ATM), for quicker and less demanding cash exchange. In any case, a gathering of individuals does acts of neglect over this ATM framework to put individuals, association or bank into a million Rupees of loses. In this venture, the framework keeps up the passage of a solitary cardholder at any given moment with the assistance of RFID peruser and unique mark. In the event that unique mark and RFID matches, the individual can gather the money without entering the PIN.

Keywords: Digitized, Economy, RFID, Fingerprint

1.INTRODUCTION:

Automated teller device (ATM) is a cyberbanking media transmission extra aswell claimed as Banknote machine, which enables the clients to achieve arranged cyberbanking undertakings for the most part banknote withdrawals. It is about bona fide as an Apparatus to Apparatus correspondence. There are 3 on-screen character banknote machines are introduced acknowledged according to the ATM Industry Association (ATMIA) advance. The sworn statement is given by entering a PIN. Presently multi-day in the public arena, the burglaries happening in ATM are top because of the compressed version of capable aegis framework. Our movement is expected to influence the entire issues and to improve the additional aegis associated by presenting the deliberation of PINLESS ATM motivation which confines the confirmation of abnormal individual. In the event that the RFID library of the framework tolerating and the contribution from the client RFID doesn't coordinate, it will discover as screwy individual, and again the tolerant needs to affirmation the persevere through four digits of the enrolled versatile measure of native motivation holder. Again an OTP has been forward to the enlisted versatile sum and the tolerant who is apparatus the ATM is asked for to confirm the OTP on the proper showcase. Again alone he is familiar with yielding the money. The reason for this movement is to confirm the aegis much the same as the ATM managing an account. When the motivation is missing or baseborn and the slogan is known, the twisted will attract all banknote direct route time which makes an astronomic mishap the client. In acclimation to change this botheration and to improve the additional aegis associated we are presenting

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An Efficient Closed Maximal Pattern Sequences Mining on High Dimensional Datasets

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Abstract - **Previous methods have presented convincing arguments that mining complete set of patterns is huge for effective usage. A compact but high quality set of patterns, such as closed patterns and maximal patterns is needed. Most of the previously maximal pattern sequences mining algorithms on high dimensional sequence, such as biological data set, work under the same support. In this paper, an efficient algorithm Closed Maximal Pattern Sequences (CMPS-Mine) for mining closed maximal patterns based on multi-support is suggested. Careful exhibitions once Beta-globin gene sequences have exhibited that CMPS-Mine expends less memory utilization and runtime over Prefix Span. It generates compacted outcomes and two kinds of interesting patterns.**

Keywords: **Multi Support, Sequential Pattern Mining, Maximal Pattern, High Dimensional Sequence**

I. INTRODUCTION

Sequential pattern mining discovers frequent subsequences as patterns in a sequence database. It is an important problem with broad applications, including the analysis of customer purchase behavior, web access patterns, DNA sequences, protein formation of a journal article in [1] and so on. Biological sequence pattern mining is a key technique in data mining, such as DNA sequence analysis and protein sequence analysis in Bioinformatics of a book in a series in [2][3][7]. Previous sequential pattern mining methods on high dimensional sequence, such as biological data set, are carried out from two aspects, one is in single sequence, and the other is in multiple sequences with same type. The problem is the method only using one support, it can't find the patterns that occur frequently in each specific sequence, or patterns with enough total occurrence frequency in all sequences of a conference paper in [4]. Previous methods mining complete set of patterns, which is huge for effective usage. We need a compact but high quality set of patterns, such as closed patterns and maximal patterns of a book in [5].

In this paper, we propose a novel algorithm to mining maximal sequential patterns based on multi-support. There are two kinds of supports: support and local support a conference paper in [4]. Therefore, two kinds of patterns are mined. The first one is sequential pattern, which is a subsequence whose occurrence frequency in the set of sequences is no less than minimum support (min_sup). It corresponds to the support. The second one is local sequential pattern, which is a subsequence whose occurrence frequency in one specific sequence is no less than local minimum support (local_min_sup). It corresponds to the local support. The rest of this article is organized as follows. Section II reviews Prefix Span algorithm, and an example of mining complete biological sequential patterns is provided. In section III, some concepts are defined, and an improvement of Prefix Span algorithm: CMPS-Mine (Closed Maximal and Multi-support-based Pattern Sequences) is proposed. Section IV shows the results of sequential pattern mining and some interesting patterns. Finally, the conclusion is provided in Section V.

II. EXISTING PREFIX SPAN ALGORITHM

The key advantage of Prefix Span, an algorithm that examines the prefix subsequences and projects only their corresponding suffix subsequences into projected databases, is that it does not generate any candidates and only counts the frequency of local items. It utilizes a divide-and-conquer framework by creating subsets of sequential patterns that can be further divided when necessary. For example, suppose the biological database S is given in Table I and min_sup=75% (0.75), so the subsequences occurrence frequency in the set of sequences is no less than 3 (4*0.75). The set of items in the database is {P, Q, R, S}, and the sequence_id are {0, 1, 2, 3}. There are 7 transactions in sequence 0. Since all the sequences contain subsequence x=PSP, x is a sequential pattern of length-3 pattern, and its *support*(x) =4(100%).

TABLE I DNA SEQUENCES

Sequence id	Sequence
0	PSPPSPA
1	SPSQSQPRQQSPSP
2	SRQPSPPQSPS
3	SQQPSPRQQ

When min_sup is 0.75, Prefixes and the corresponding projected databases and patterns of database S are shown in table II. It is clear that, there are 10 patterns, 4 length-1 patterns, 4 length-2 patterns and 2 length-3 patterns. From the complete patterns, we can see that the patterns: P, PS, PSP in line 1 can be compressed as one pattern PSP. The reason is that PSP is super pattern of P and PS.

AN ENHANCED AD HOC ON-DEMAND DISTANCE VECTOR ROUTING PROTOCOL FOR MANET'S

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Abstract: Mobile Ad hoc Network is a recurrently self-configuring network possessed of a standard set of mobile devices which can converse between them without infrastructure attached wirelessly. This paper make available a flexible model that support end-to-end optimized QoS support in ad hoc networks that is both competent and easily deployable. This architecture uses agent based QoS administration and route decisions are made after calculation of available local and flow bandwidths under the consideration of link availability. This end-to-end admission control or signaling eliminates the rerouting of route request and route replies and packets transmission thus increase the bandwidth consumption and limits the nodes in transmission. This includes an admission control system that comprises an end-to-end Route Requests to avoid making stringent bandwidth reservations, so present soft QoS guarantees to real-time flows.

IndexTerms **- manet, QoS, network agent, opmaodv.**

I. INTRODUCTION

Mobile Ad hoc Network is a recurrently self-configuring network made of a standard set of mobile devices which can converse between them without infrastructure attached wirelessly. Each device organized in a MANET remains unrestricted to be in motion alone in any route, and so change its associations to other devices often. Quality of Service is the overall performance realized by the users of the network. QoS in a network is measured quantitatively using several parameters such as error rates, bit rate, throughput, availability, transmission delay and jitter etc., Quality of service is principally significant for the conveyance of traffic with special necessities supporting new applications with even stringent service demands.

II. PROPOSED SYSTEM ARCHITECTURE

The suggested QoS architecture gives support to real-time applications in MANET. The goal of proposed method is to provide a sustainable framework that offer end-to-end QoS support to ad hoc networks and that is both capable and easily deployable using present technology. Georgiadis et al. [1] have presented that making resource reservations in multi-hop wireless environments for admission control is an NP-hard problem that is even under streamlined rules for bandwidth arrangement. This expresses that the per-node local quantities do not contain abundant data for end-to-end bandwidth reservation. This makes putting into practice of bandwidth reservation schemes for MANETs as difficult (e.g., the one proposed in the INSIGNIA [2] framework). So, we considers a QoS framework by comprising a unique admission control system based on end-to-end Route Requests that skips making stern bandwidth reservations, thus contributes soft QoS guarantees to real-time flows. The diverse architectural components, shown in Fig.1, fit in to an integrated QoS architecture described by numerous cross-layer optimizations among its components.

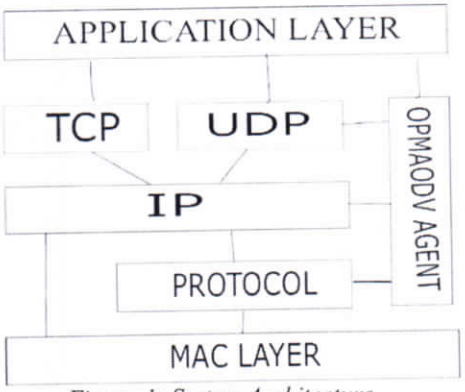

Figure 1: System Architecture

The core element of the proposed QoS architecture is OPMAODV agent. This realizes a Request -based admission control mechanism that achieves end-to-end QoS measurements according to the applications QoS requirements. On the other hand, this is not a firm requirement since OPMAODV agent will still operate independently of the MAC layer used. In terms of the software required for MANET nodes, the sources and destinations of QoS flows must have an OPMAODV agent running. The remaining nodes will simply treat forwarded packets as regular data packets, being ignorant of the mechanism itself.

Regarding OPMAODV agent modules, Fig. 2 shows the designed block diagram of an OPMAODV agent. The main component of OPMAODV agent is QoS module. The QoS module is accountable for evaluating QoS parameters on an end-to-end path. Another component is the packet filter, which blocks all network traffic that is not acceptable into the MANET agreeing to these end-to-end measurements.

IOT BASED SOIL WATER POTENTIAL MONITORING SYSTEM USING IRROMETER SENSORS

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Abstract : Now a days monitoring soil moisture is one of the methods used by farmers for irrigation purpose. Due to that point developing numerous sensor types and data logging systems but their widespread adoption in years for this purpose due to a number of factors, the practical schedule for irrigation is still limited. Significant Factors that limit farmers ' use of soil moisture sensing technology Include high costs and challenges in collecting and interpreting timely data. Recent developments in microcontrollers in open source (such as Arduino) Internet - of - Things (IoT) and wireless communication provide farmers with opportunities to reduce costs and facilitate timely data collection, visualization and interpretation. The aim of this study was therefore to develop and test a low cost IoT system for the monitoring of soil moisture using Watermark 200SS sensors. The system uses Arduino-based microcontrollers and field sensor data (End Nodes) is transmitted wirelessly via LoRa radios to a receiver (coordinator) that connects to the Internet via WiFi and sends data to an open source website (ThingSpeak.com). Under field conditions, the system was successfully tested by installing watermark sensors at wheat field. The system described here could contribute to the widespread adoption of easy-to - use and affordable moisture sensing technologies among farmers.

IndexTerms – -Internet of Things, Automation, soil moisture, sensors, Arduino, Watermark Sensors.

1. Introduction

The efficient and efficient use of irrigation water in agriculture is essential for the long - term economic and environmental sustainability of irrigation. Agricultural operations. Therefore, it is important to develop and promote cheaper and efficient precision irrigation for farmers allowing irrigation water to be applied where, where and in the amount needed to maximize profits while protecting the environment. Over the years, a number of sensing technologies have been developed to help farmers schedule irrigation appropriately.

Weather - based irrigation schedules use weather information and other auxiliary inputs to model the development of crops and the state of soil water [1]. Despite a great deal of effort to make this method available to growers Its practical application among commercial farmers remains limited through the development of local weather station networks and the creation of software and apps to automatically download and analyze the weather data collected [2][3].

The use of plant sensors for irrigation planning, in particular in arid regions, has The focus was on using infrared thermometers to detect the temperature of the canopy [4][5] 6]. This approach was based on the inclination of water - stressed crops have a higher temperature of canopy than unstressed crops; that has long been proposed as an irrigation schedule [7][8][9][10][11]. Despite some success, the use of canopy temperature for irrigation scheduling can have significant limitations [12][13], especially for crop canopies that are incomplete and humid. Its application among commercial farmers is therefore still very limited. Sensing the soil with soil moisture sensors is another important technology for farmers to decide when to irrigate their crops and how much water to use. A recent large - scale commercial study Nebraska corn farmers [14] showed that sensor - based irrigation schedules saved 33 percent of water and reduced pumping costs of $ 28.5 per acre per year without significant yield reduction Compared to the irrigation scheduling strategy of the farmer. But, even if a large one Different sensors and data logging systems. There are currently commercially available soil moisture monitoring logging systems, and the use of soil moisture sensors to make decisions on the scheduling of irrigation among commercial farmers remains limited. Factors that affect farmers ' limited adoption of this technology include a lack of Information, high costs, difficulty in installing and maintaining equipment and difficulties in transmitting data in real time from field sensors to the farmer.

Development and integration of low - cost and open - source microcontroller devices and software Communication technologies such as radio, cell phone and WiFi [15] offer opportunities for more cost - effective and efficient soil moisture monitoring systems [16] and their integration into irrigation schedules [17] and automation systems [18]. Furthermore, recent developments in Internet - of - Things (IoT) technologies are used in a wide range of applications, including smart wearable's, smart homes, smart cities, smart environments and smart businesses [19]. The Implementation of These technologies are still very limited in commercial agriculture, but could offer opportunities to improve irrigation schedules based on soil moisture monitoring by making data more accessible in real time to farmers. The objective of this study was therefore to develop and test a low cost IoT system for monitoring soil moisture with the Watermark 200SS sensor. The overall objective of this project was to make the monitoring of soil moisture more affordable and efficient to promote the adoption of irrigation planning technologies among commercial farmers.

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AWSQ: an approximated web server queuing algorithm for heterogeneous web server cluster

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ABSTRACT

With the rising popularity of web-based applications, the primary and consistent resource in the infrastructure of World Wide Web are cluster-based web servers. Overtly in dynamic contents and database driven applications, especially at heavy load circumstances, the performance handling of clusters is a solemn task. Without using efficient mechanisms, an overloaded web server cannot provide great performance. In clusters, this overloaded condition can be avoided using load balancing mechanisms by sharing the load among available web servers. The existing load balancing mechanisms which were intended to handle static contents will grieve from substantial performance deprivation under database-driven and dynamic contents. The most serviceable load balancing approaches are Web Server Queuing (WSQ), Server Content based Queue (QSC) and Remaining Capacity (RC) under specific conditions to provide better results. By Considering this, we have proposed an approximated web server Queuing mechanism for web server clusters and also proposed an analytical model for calculating the load of a web server. The requests are classified based on the service time and keep tracking the number of outstanding requests at each webserver to achieve better performance. The approximated load of each web server is used for load balancing. The investigational results illustrate the effectiveness of the proposed mechanism by improving the mean response time, throughput and drop rate of the server cluster.

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1. INTRODUCTION

The volume of the information available online and services available for the internet users increased through the blast of the world wide web. The thriving of various service demands and information has made a sensational burden on the World Wide Web (WWW) infrastructure. To serve a large number of client request they need advanced web server systems. Users can expect less response time and low site downtime. To attract new customers and not to lose the current market web service providers must provide their applications with greater performance. Due to scalability, availability and cost-effectiveness of distributed web server cluster architectures, they became more popular instead of using one web server, which has high processing capabilities.

In 1995, the number of internet users was less than 1% in the world population, whereas today it is 40%. In 2016, there were 3.5 billion internet users while in 2005 there were 1.02 billion internet users [1]. With the fast evolution of internet traffic, maximum popular websites need to scale up their server volumes. The popular way to provide a list of alternative, or equivalent mirrored servers at different locations. The

Distributed Load Balancing Algorithm for Wireless Sensor Networks

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ABSTRACT— *A remote sensor arrange (WSN) comprises of spatially scattered independent sensors to screen physical or ecological conditions and to amiably go their information through the system to a Base Station. Clustering is a basic undertaking in Wireless Sensor Networks for vitality effectiveness and system quality. Clustering through Central Processing Unit in remote sensor systems is notable and being used for quite a while. In this paper, we propose a few techniques that balance the vitality utilization of these hubs and guarantee most extreme system lifetime by adjusting the activity stack as similarly as would be prudent. By and by Clustering through conveyed techniques is being created for appropriating with the issues like system lifetime and vitality. In our work, we connected both incorporated and dispersed k-implies Clustering calculation in system test system. k-implies is a model based calculation that surrogates between two noteworthy advances, passing on perceptions to groups and processing Cluster focuses until a ceasing standard is satisfied. Reproduction results are achieved and related which demonstrate that appropriated Clustering is powerful than centralized clustering.*

Keywords-DLB(Distributed Load Balancing) ,WSN, wireless sensor network; clustering; ns-2; k-means; network stability

I. INTRODUCTION

Remote sensor organize (WSN) contains of two classes of hubs, in particular essential and optional hubs. Essential hubs all around selected with sensor and radio framework. The Secondary hubs are essentially the sending hubs which have a radio alone to go about as discontinuous (connect) hubs. These hubs made animated the development of remote sensor systems (WSNs) in applications including ecological observing, war zone investigation, atomic, natural and compound assault recognition, social insurance and home applications. WSN is made with the controls out of constrained vitality [1], memory [1], handling power [2], and data transmission for correspondence [2], and radio range [2]. As sensors must work under strict power requirements, transmitting data detected to end station might be infeasible. This moves to scan for making assets by utilizing Clustering calculations sharing data in single-bounce neighbors as it were. Clustering is the mix of comparative items and a grouping of a set is a segment of its components that is chosen to limit some proportion of variety [3]. Clustering calculations are regularly valuable in applications in different fields, for example, man-made reasoning, perception, learning hypothesis, PC illustrations, neural

GLOBAL SECURITY USING HUMAN FACE RECOGNITION SYSTEM

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Abstract : Face recognition is a topic of biometrics that is currently receiving a lot of attention. Different methods containing biometric algorithms are presented for the representation of eigenfaces detection including face recognition, are identification and verification. This paper work aims to manage the critical processing stages (accuracy, speed, security and monitoring) of face activities with the flexibility of searching and edit the secure authorized database. In this paper different techniques such as eigenfaces vector reduction by using texture and shape vector phenomenon for complexity removal, while density matching score with Face Boundary Fixation (FBF) extracted the most likelihood characteristics in this media processing contents have been presented. This work attempts to show the performance accuracy and security gain with better achievement than a number of previous approaches in all the above processes in an encouraging mode.

IndexTerms **– Face Recognition, Global Security, Human Face**

1. INTRODUCTION

GLOBAL Security of User Computer Interaction (GSUCI) research is designed and developed for the security based-system that allow efficient and natural phenomenon for both communication and interaction at any conceivable environment. GSUCI along with ubiquitous vision system circled around W5H phenomenon which is being exposed by considering the identification, activity detection (input), recognition, time limitation according to appropriate place, accuracy (output) and emotion control are discussed in our research. Simultaneously, human behavior monitoring is not only verified by everyday experience but also the validity of comprehensive information play side-by-side role in real-time communication environment. While, a comprehensive set of effective access control between vision ubiquitous architecture with secure database lead towards strong and ever-build communication. Further, ubiquitous computing along with wireless network fetches secure information of human computer interaction by the allocation of different video cameras position.

In this paper we present identification applications which represented the feature vectors of fixed frontal, by applying the critical boundary algorithm to identify unknown face.

While in verification application, the numerical implementations meet the need of validity of the claimed identity to consider the output matching score with likelihood ratio phenomenon. Successful implementation of face verification moves towards the face recognition section which evaluates different techniques to get the most matching scores eigenfaces. Finally, management query information of particular input (eigenface) is authenticate, schedule, monitor and serve as an output. Therefore, our goal is to convey viewer's attention towards different matters to preserve the global security and reliability of our system.

According to comparison of our architecture with other researchers, pattern matching methods deal with huge number of dimensions feature vector with their redundant characteristics. So the recognition is not accurate and hardly to make stable. Due to this condition, some low-dimensional feature vector is required to give surety of different eigenfaces. Also view capturing phenomenon consists of different techniques, in which frontal, half-face and ¾ views for recognition are most running ideas. It shows their advantageous improvement but their complication and insecure information gathering, let our system to introduce Frontal face boundary fixation phenomenon with numerous modifications based on view system. In paper [1], the performance of varying lighting conditions is for away from ideal condition and unusual for practical implementation in real application. So the proposed uniform light normalization process is needed to act boldly in all conditions. While ASM [2] technique emphasis on a particular part of face shows more simple and quick data processing but accuracy move towards decline in huge amount of eigenfaces. So implementation of average difference of most local features analysis is required to achieve positive enhancement with secure management. The paper is organized as follows. In the second section we describe the features of identification ev aluation based on boundary fixation images along with monitoring-based security system in verification process. In the third and fourth sections, we explain the human-face recognition method and the results obtained from these methods. Finally, in the fifth section, we give our conclusions and suggest new direction for future research.

2. IDENTIFICATION AND VERIFICATION METHODS

The main issue of the technologies discussed here is to identify an unknown face by performing operations on the system and extract the features of most resembled face. Simultaneously, this proved the claimed identity of the face by the system. Processing flow of system face recognition is generally fulfilling the task.

2.1 Methodology of identification evaluation

Identification evaluation of frontal face images is considered which performs the view and orientation characteristics to run on a fixed frontal face image for recognition. This method using Principal Component Analysis (PCA) performing functions on features vectors to represent different person properties (position and face different features) for multiple facial images. Considering the searching phenomenon of eigenfaces, we have to reduce the dimensionality of facial patterns to scratch and distinguish reliability from different faces.

IoT based Smart Health Monitoring and Management with Cloud-based Processing

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Abstract- Among the panoply of utilizations empowered by the Web of Things (IoT), savvy and associated social insurance is a especially vital one. Organized sensors, either worn on the body or installed in our living surroundings, makeconceivable the social occasion of rich data demonstrative of our physical and emotional wellness. Caught consistently, totaled, and viably mined, such data can realize a positive transformative change in the medicinal services scene. Specifically, the accessibility of information at until now unheard of scales and fleeting longitudes combined with another age of astute handling calculations can: (an) encourage an advancement in the routine with regards to medication, from the present post facto analyze andtreat responsive worldview, to a proactive system for visualization of ailments at an early stage, combined with aversion, fix, also, by and large administration of wellbeing rather than malady, (b) empower personalization of treatment and the board alternatives focused on especially to the explicit conditions and needs of the individual, and (c) help diminish the expense of medicinal services while at the same time enhancing results. In this paper, we feature the chances and difficulties for IoT in understanding this vision of things to come of medicinal services.

Keywords-remote health monitoring; IoT; visualization; analytics;

I.INTRODUCTION

Ongoing years have seen a rising enthusiasm for wearable sensors what's more, today a few gadgets are financially accessible [1]– [3] for individual social insurance, wellness, and action mindfulness. In expansion to the specialty recreational wellness field took into account by momentum gadgets, scientists have likewise thought about applications of such advancements in clinical applications in remote wellbeing observing frameworks for long haul recording, the executives and clinical access to patient's physiological data [4]– [8]. In view ofcurrent innovative patterns, one can promptly envision a period sooner rather than later when your routine physical examination is gone before by a two– multi day time of ceaseless physiological observing utilizing modest wearable sensors. Over this interim, the sensors would ceaselessly record signals corresponded with your key physiological parameters and hand-off the subsequent information to a database connected with your wellbeing records. When you appear for your physical examination,the doctor has available not only conventional clinic/lab-testbased static measurements of your physiological and metabolicstate, but also the much richer longitudinal record provided bythe sensors. Using the available data, and aided by decisionsupportsystems that also have access to a large corpus ofobservation data for other individuals, the doctor can makea much better prognosis for your health and recommendtreatment, early intervention, and life-style choices that areparticularly effective in improving the quality of your health.Such a disruptive technology could have a transformativeimpact on global healthcare systems and drastically reducehealthcare costs and improve speed and accuracy for diagnoses.

Machine Learning-based Credit Scoring System and Framework of "Peer Trust Score" Model

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Abstract: Credit scores hold significant importance for the people to avail credit from the banking and fin-tech companies. With the increasing trends of using the contemporary model of credit history evaluation, there is a need for a more comprehensive solution that can take in to account the peer trust factors too. In this manuscript, the emphasis is on understanding the existing set of machines learning-based credit scoring systems and to propose a "Peer Trust Score" system that can support in a more comprehensive solution. The proposed framework upon testing in conjunction with some of the existing machine learning-based solutions, the accuracy and the structure of the credit scoring system can be more strengthened. The key benefits of the proposed framework are responsibility and accountability tagged to the trust score from the endorsers and to develop a sustainable scoring pattern for managing the credit scores of individuals.

Key Words: *Credit Scores, Fintech, P2P lending trust, GA based Credit Score.*

1 Introduction

The economic development of a nation depends on various factors, wherein even the banking system is one of the critical factors that influence the holistic economic development. The business fundamental of a bank relies on a sustainable model of a collection of deposits from the customers, disbursal of loans, interest collection over the loans issued.

The credit management systems of the banking industry have evolved over a period of time and today, there are a set of banking rules and practices in place towards disbursal of loans to the customers. Irrespective of credit category (credit cards/personal loans/secured loans/mortgage loans etc.) credit score is turning to be one of the important criteria in the process of decision making about the disbursal of loans [1].

Though, there are few other factors like the employment status, organization in which the person is working, income tax filing records, loan amount, etc. are important in the role of decision making, still the credit history (recorded in the form of credit score) is one of the key attributes in loan disbursal. Depending on the nation and its banking system, in every country, there is a par credit score which is considered a good credit history.

Predominantly such credit scores are rated based on the reports furnished by all the private and public banking and financial institutions to a credit scoring agency. The credit history of the individual is managed based on an individual's unique identity number (depending on the country of operations). The information furnished to the credit scoring agencies is profoundly the payment default information, credit utilization ratio (usually in the case of the credit cards), number of loans issued to a customer, etc.

Machine Learning Based Solutions for Human Resource Systems Management

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Abstract: Human resource management in the organizations today is more of a strategic alignment to the organizational objectives. The role of deep learning models, machine learning solutions handling the human resource management operations are increasing and the organizations are focusing on more pragmatic set of solutions. Machine learning models are currently making strides in to various set of functions in human resource management. This study provides an outline of key HR functions wherein the machine learning and AI based solutions can be implemented, which can improve the process quality. Focusing on three different dimensions of employee engagement, organizational culture management and the appraisal system, three distinct possible and potential scope of implementation of AI solutions are discussed in this report. Usage of decision tree model and the logistic regression models for the training of datasets to the application, can increase the chances of solutions being more significant and the ones that could deliver optimal kind of appraisal system. If the solutions are devised in the discussed lines, it can be resourceful for the organizations towards managing the strategic human resource practices.

Keywords: *HRM, AI in Human Resources, Machine Learning for employee engagement, Machine Learning in HR.*

1 Introduction

Human resources management is one of the key areas where in the role of information systems has been evolving over period. From the level of personnel department system to the current process of AI based human resource management solutions, there is paradigm shift that has taken place in the domain and significant solutions are evolving in the spectrum. In the current competitive scenario for organizations, human resources are considered to be one of the key assets that improve the sustainability of the organizations [1].

In the early developments of human resource departments, the MIS system was prevalent in terms of managing the employee data, pay-roll processing and other services of HR department. With the evolving, IT systems like the enterprise applications, the scope has expanded to the levels of managing human resources using integrated systems. Today, the scenario is about usage of the Artificial Intelligence and the machine learning kind of solutions in the human resource management.

With the increasing need for the organizations to have right kind of resources in the organization and focusing on the optimal performance management of the staff, it is evident that if quality solutions of AI are used, there is phenomenal scope for development. The objective of

MRF: Multivariate Data Clustering using Heuristic Data Intensive Computing and Relevance Feedback Learning Approach

M. Sankara Prasanna Kumar, A. P. Siva Kumar, K. Prasanna

ABSTRACT--- Most of the problems in the real world are multivariate i.e., involves many variables. Multivariate data comprises of several datasets with more than one variable. Multivariate datasets has power to change the use of data dramatically as database size increases and it shows adequate results on predicting the effect on change in one variable will have on other variable. These datasets consist of transitive and intrinsic hidden relationships among the variables such as analyzing a variable is influenced by other process variables and preferences. It is the situation where efficient multivariate data analysis techniques exhaustively needed to catalog the given type of data. In the literature several techniques are proposed and analyzed; one such technique is multivariate data clustering.

This paper will present a unified framework of multivariate data clustering using heuristic data intensive computing and relevance feedback learning. The implementation starts with formalizing a heuristic data intensive computing (HDIC) which have the ability to handle data flows. Clustering the data is performed with proposed Relevance feedback learning algorithm with consensus functions. These functions are selected as the change in the cluster ensemble selection, combine and reduction. In this proposed approach we have used a new kind of distance functions such as Camberra, Chi-square and Cityblock. The empirical analysis shows that, the proposed approach attains better cluster ensembles on various multivariate datasets taken from UCI and out performs with k-nearest neighbour (KNN) in different settings. The performance of the proposed approach is assessed with Accuracy and F1-measure.

Index Terms—Multivariate data, clustering, consensus functions, cluster ensembles, k-nearest neighbour (KNN).

I. INTRODUCTION

Since from last two decades, the developments in information technology has introduced the necessity of data processing techniques. Similarly the developments in database technology, has introduced various kinds of databases and forcing us to develop new techniques and analysis methods for efficient data prediction and decision making.

Multivariate data or "data with more than one variable" is an active research area with a wide range of applications [1]. Due to the intrinsic relationships existing in multivariate data, traditional data analysis methods such as classification and clustering are having difficulties while discovering efficient relationships between several variable simultaneously. As the database size increases dynamically and the dramatic changes in the use of data will show adequate results on predicting the effect on change in one variable will have on other variable. This introduces the necessity of Multivariate data analysis.

Multivariate data clustering takes A larger group of objects and measurements on them of some properties. on the basis of these, multivariate data clustering then attempts to group the samples on the basis of samples similitude or dissimilarity. The analysis of clusters aims to systematize variable information to create relatively homogeneous groups or clusters. Very homogeneous internal and highly external homogenous This method is used to form clusters. A number of similarity measures can be defined in order to recover data elements for specific classes, corresponding to data nature, rationale and means governing cluster formation. The analysis of the cluster is an iterative optimization process and differs from the automatic task and involves knowledge discovery and interaction with multi-target testing [8]. Implementation is the prerequisite for inspecting the similarity. It is an important task in the analysis of statistical data, exploratory data mining, used in many fields, together with machine learning with the collection of information, pattern recognition and image analysis and bioinformatics. With the developments of multivariate data, more attention has been paid in identifying predictors or independent variables and dependent variables. Most of the research work was concentrated on identifying only dependent variables rather than predictor variables containing one or two datasets.

However, those existing work mostly considered identifying dependent variables using univariate data analysis. Furthermore, there is a large difference between data predictors in different datasets, primarily because of the diverse changes in multivariate data and variables. While univariable approaches are intended to research and understand systems, when more complex systems are analyzed, they tend to fail. Thus for multivariate data analysis, the following challenges remain: How should the missing data be addressed? How should the over simplistic and overoptimistic assessment of the data is handled? How can the relations between the variables studied be detected? How to know the *covariance* or *correlation* that exists with Multivariate data [12]. To solve these problems, the proposed work will concentrate on identifying dependent and predictor variables in presence of missing data and discovering correlation and eccentric relationships among these variables.

In this paper, we study an improved multivariate data

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On Control Aspects of Quality of Service in Mobile Ad Hoc Networks

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Abstract Provisioning Quality of Service (QoS) in a MANET is a prominent research area due to the ongoing increasing range of MANET applications. The need to improve QoS in these networks has been vital due to the traits which include dynamically changeable network topology, be short of facts about state, unavailability of a primary controller, and insufficient availability of resources. To quantitatively evaluate QoS in a MANET several associated metrics are preferred. This paper explores QOS aspects and metrics, after which mentioned the scope and relevance of manipulated aspects in view of the divisible and non-divisible traffics in the network for QoS.

Keywords QoS metric · Manet · Ad hoc wireless networks
Quality of service

1 Introduction

A mobile ad hoc network (MANET) is an endlessly self-configuring network possessing a set of portable devices which can converse between them lacking infrastructure associated wirelessly. Each piece of equipment in a MANET is liberated to be in motion alone in any route, and will frequently change its associations to other devices. The most important challenge in building a MANET is to enable each piece of equipment to keep up the information requisite to properly en route traffic. Such networks may function by themselves or may be linked to the wider internet. QoS in a network is considered in terms of the provision of a definite amount of data which a network conveys from one point to another during a certain amount of time.

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Precision Agriculture using Internet of Things and Wireless sensor Networks

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ABSTRACT:

The Internet of Things (IoT), the idea of getting real-world objects connected with each other, will change the way users organize, obtain and consume information radically. Internet of Things (IoT) enables various applications (crop growth monitoring and selection, irrigation decision support, etc.) in Digital Agriculture domain. The Wireless Sensors Network (WSN) is widely used to build decision support systems. These systems overcome many problems in the real-world. One of the most interesting fields having an increasing need of decision support systems is Precision Agriculture (PA). Through sensor networks, agriculture can be connected to the IoT, which allows us to create connections among agronomists, farmers and cropsregardless of their geographical differences. With the help of this approach which provides real-time information about the lands and crops that will help farmers make right decisions. The major advantage is implementation of WSN in Precision Agriculture (PA) will optimize the usage of water fertilizers while maximizing the yield of the crops and also will help in analyzing the weather conditions of the field.

Keywords *: IoT, precision, WSN.*

INTRODUCTION:

Agriculture is the science, art or practice for cultivating the soil, producing crops usingdifferent preparation methods and technologies and marketing the resultant products produced in the farming. India is an agriculture based country. Most of the Indian families follow agriculture as their main occupation. Farmers can be termed as the ecosystem engineers as they cultivate the crops in the ecosystem using different engineered methods, techniques & machines. The traditional farming practices along with the following conditions such as dependence on monsoon, fragmented land farming and holding, poor infrastructure in rural areas and less usage of technology applications still holds the Indian agriculture behind in the race of modern agriculture. As the Indian agriculture still follows the traditional methods which do not give efficient results in contrast to the effects observed with the help of new technologies. The modern farming practices revolve around the new concepts such Internet of Things (IoT), Wireless Sensor Networks (WSN) and Precision Agriculture (PA). The Internet of Things can be defined as the network of physical objects or devices embedded with electronics,software's, sensors and network connectivity which enables these objects to collect and exchange data. Whereas the Wireless Sensor Network is the spatially distributed autonomous sensors to monitor physical or environmental conditions and to co-operatively pass their data through the network to a main location.

Privacy Characterization and Quantification in Data Publishing

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Abstract—The increasing interest in collecting and publishing large amounts of individuals' data as public for purposes such as medical research, market analysis, and economical measures has created major privacy concerns about individual's sensitive information. To deal with these concerns, many Privacy-Preserving Data Publishing (PPDP) techniques have been proposed in literature. However, they lack a proper privacy characterization and measurement. In this paper, we first present a novel multi-variable privacy characterization and quantification model. Based on this model, we are able to analyze the prior and posterior adversarial belief about attribute values of individuals. Based on our framework and the proposed metrics, we can determine that all the existing PPDP schemes have limitations in privacy characterization. Our proposed privacy characterization and measurement framework contributes to better understanding and evaluation of these techniques. Thus, this paper provides a foundation for design and analysis of PPDP schemes.

Index Terms—Data privacy, data security, data publishing, big data, data mining, privacy quantification, privacy leakage

1 Introduction

NOWADAYS, datasets are considered a valuable source of information for the medical research, market analysis and economical measures. These datasets can include information about individuals that contain social, medical, statistical, and customer data. Many organizations, companies and institutions publish privacy related datasets. While the shared dataset gives useful societal information to researchers, it also creates security risks and privacy concerns to the individuals whose data are in the table. To avoid possible identification of individuals from records in published data, uniquely identifying information such as names and social security numbers are generally removed from the table. While the obvious personal identifiers are removed, the quasi-identifiers such as zip-code, age, and gender may still be used to uniquely identify a significant portion of the population since the released data makes it possible to infer or limit the available options of individuals than would be possible without releasing the table. The spate of privacy related incidents has spurred a long line of research in privacy notions for data publishing and analysis, such as k-anonymity, l-diversity and t-closeness. A table satisfies k-anonymity if each quasi-identifier attribute in the table is indistinguishable from at least k ! 1 other quasi-identifier attributes; such a table is called a k-anonymous table. While k-anonymity protects identity disclosure of individuals by linking attacks, it is insufficient to prevent attribute dis-closure with side information. By combining the released data with side information, it makes it possible to infer the possible sensitive attributes corresponding to an individual. Once the correspondence between the identifier and the sensitive attributes is revealed for an individual, it may harm the individual and the distribution of the entire table.

Research on data privacy has purely been focused on privacy definitions, such as k-anonymity, l-diversity, and t-closeness. While these models only consider minimizing the amount of privacy leakage without directly measuring what the adversary may learn, there is a motivation to find consistent measurements of how much information is leaked to an adversary by publishing a dataset.

In this paper, we begin by introducing our novel data publishing framework. The proposed framework consists of two steps. First, we model attributes in a dataset as a multi-variable model. Based on this model, we are able to re-define the prior and posterior adversarial belief about attribute values of individuals. Then we characterize privacy of these individuals based on the privacy risks attached with combining different attributes. This model is indeed a more precise model to describe privacy risk of publishing datasets. For a given dataset, before it is released, we want to determine to what extent we can achieve privacy. Therefore, we introduce a new set of privacy quantification metrics to measure the gap between prior information belief and posterior information belief of an adversary, from both local and global perspectives. Specifically, we introduce two privacy leakage measurements: distribution leakage and entropy leakage. We discuss the rationale for these two measurements and illustrate their advantages through examples. We show how considering only one metric ignoring the effect of the other strongly contributes to the information leakage and in turn affects the privacy.

An intuitive example for this problem is reviewing a blood work. The medical status of a patient cannot be determined based on only one measure even if this particular measure is the most sensitive one. Instead, a physician has to review the relation between combinations of all measures in the blood work. We show that a minimized distribution leakage between sensitive attribute values distributions of the original and the published datasets does not essentially achieve the minimum entropy leakage that an

Quality Aware Transmissions over IP based Networks: A review

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Abstract: Exponential growth of internet users and the speed internet connectivity envisaged by several orders of magnitude. To accomplish increasing real time requirements, user applications have to send different kinds of data with different speeds over the internet. Existing user applications have upgraded to support huge bandwidth utilization. To affect the aims of the computer networks, several protocols added to TCP/IP protocol suite. With rapid growing application needs and with increasing number of networks in Internet, there is integral need to ensure designing of new protocols to transport layer. Transport layer has to implement emerging techniques to transfer huge amount of data like multimedia streaming. Multimedia services plays prominent role than data services in next generation internet. With increasing real time requirements, internet technology has to provide QoS (Quality of Service) for various kinds of real time streaming services. When the bandwidth exceeds the available network resources, network paths can get congested, which results in delay in packet delivery ratio and packet loss. Also, the congestion control mechanisms are among the effective solutions in traffic management to provide QoS in the networks. The scenario supports in addressing congestion avoidance and better control of network.

Keywords: *Quality of Service, TCP, MAC layer, dropping packet probability, RED algorithm.*

1 Introduction

Network is the interconnection of varied systems and might comprise two or more computers that are connected either by a wired network or by wireless network. Among the key reasons, why the companies are keen on network is to ensure resource sharing and optimum utilization of resources. Predominantly the data memory, hardware configuration and access to the interconnected systems are some of the key factors that drive the business. The service request in a network from a system defined as client and the other computers that provide service to the client defined as server. Network Interface Cards, cables, hubs and switch, servers are some of the key components of the network infrastructure and the software deployed based on the requirements. Protocol is the defined term of standard procedure adapted for managing the data transmission amidst the computers in a network. Establishing a connection by identifying the proper source and destination, for transmission of data is the key job of protocol. UDP and TCP/IP are some of the protocols that used for data transmission over the network.

The communication data unit in physical layer of TCP/IP called a bit. This layer defines standards and protocols for communication between two hops or nodes, either a computer or router. This layer defines some specific functionality like transmission media, mode, interfaces, representation and synchronization of bits etc., the communication data unit in data link layer of TCP/IP called a frame. This layer does some specific services to upper layers are framing, flow

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Secure Key-De duplication with IBBE

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Abstract : Deduplication, which can spare stockpiling cost by empowering us to store just a single duplicate of indistinguishable information, turns out to be exceptionally noteworthy with the sensational increment in information put away in the cloud. To ensure information classification, they are typically encoded before re-appropriated. Conventional encryption will definitely result in numerous distinctive ciphertexts created from the equivalent plaintext by various clients' mystery keys, which blocks information deduplication. Concurrent encryption makes deduplication conceivable since it normally scrambles the equivalent plaintexts into the equivalent ciphertexts. One orderly issue is the way to dependably and successfully deal with countless keys. A few deduplication plans have been proposed to manage the joined key administration issue. Be that as it may, they either need to present key administration servers or require cooperation between information proprietors. In this paper, we plan a novel customer side deduplication convention named KeyD.

Key Words : Data Deduplication, Convergent Encryption, Convergent Key Management, IBBE.

I. Introduction

The information is developing seriously with the approach of the time of Big Data. We have to always expand the capacity gadgets in the event that we keep utilizing the customary stockpiling way. Then again, an ever increasing number of clients are inclined to out-source their capacity to cloud, for example, Amazon Web Services (AWS) [1] for monetary investment funds. The consistently expanding information and clients, combined with numerous reinforcement and different elements, result in increasingly more duplication of records or blocks in the cloud. So as to enhance the capacity proficiency in the compensation as-you-go demonstrate [2], deduplication task is received for disposing of copy duplicates of repetitive information on the cloud-side.

So as to enhance the capacity productivity in the compensation as-you-go demonstrate [2], deduplication activity is embraced for wiping out copy duplicates of repetitive information on the cloud-side. Consider a precedent that m clients redistribute similar information copies1 of n TB to the CSP. With information deduplication, just a single duplicate is really put away in the cloud, and the resulting occasions are referenced back to the spared duplicate for lessening stockpiling generally from mn to n TB. Be that as it may, so as to secure the wellbeing of the redistributed information, they are generally scrambled by their proprietors previously re-appropriated to the CSP. At that point it comes the issue, in what manner can the CSP perform deduplication when these equivalent information duplicates are scrambled into various ciphertexts by various clients ?

Convergent encryption (CE) [3], which encrypts a data duplicate with a joined key determined by registering the cryp-to realistic hash estimation of the substance of the information duplicate itself and along these lines can deliver indistinguishable ciphertext from indistinguishable plaintext, brings the would like to acknowledge deduplication while guaranteeing information secrecy. This property of joined encryption enables the CSP to perform deduplication on encoded information. Specifically, clients scramble their information duplicates utilizing relating united keys and redistribute en-crypted information to the CSP. They simply need to keep focalized keys locally with the goal that they can later reestablish the information. Be that as it may, the quantity of concurrent keys increments straightly with the quantity of information duplicates since an information duplicate compares to a united key. As we as a whole know, in pragmatic document stockpiling frameworks, for example, Google File System GFS [4] and Hadoop Distribute File System HDFS [5], information records are generally isolated into fine-grained blocks to encourage deduplication the board, which makes the concurrent key stockpiling considerably increasingly genuine.

- We propose a novel customer side deduplication plot. In particular, we make a mix of convergent encryption (CE) and ID-based communicate encryption (IBBE) to accomplish secure and productive convergent key administration, without presenting some other autonomous key administration servers or trusted outsiders.

- Security examination exhibits that our plan ensures the classification of information documents and the security of concurrent keys.

- A far reaching execution examination among KeyD and a few present works is given, demonstrating that our plan improves a tradeoff among the capacity cost, correspondence overhead and calculation overhead.

II Related Work

Information deduplication in distributed storage [10] [11] is a successful method to enhance storage room usage by eliminating copy duplicates. As indicated by the area where it is performed, deduplication methodologies can be separated into server-side deduplication and customer side deduplication. In server-side plans, the CSP performs deduplication after it gets all information, in this manner part of the system transmission capacity will be squandered to transfer copy duplicates. In customer side plans, every datum duplicate is transferred just once. At the point when clients transfer copy information, they will be educated by the CSP about the duplication and

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Security and Power Management for Ethernet –Based Smart Home Framework Through IoT

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Abstract- ***The paper displays the plan and execution of an Ethernet-based Smart Home clever framework for observing the electrical vitality utilization dependent on the ongoing following of the gadgets at home an INTEL GALILEO 2ND age improvement board, which can be utilized in homes and social orders. The proposed framework takes a shot at continuous observing and voice control, so the electrical gadgets and switches can be remotely controlled and checked with or without an android based application. It utilizes different sensors to screen the constant gadget following as well as keeping up the security of your home. It is observed and controlled remotely from an android application utilizing the Internet or the Intranet network. The proposed result of the task points as numerous advantages of saving money on power bills of the home just as keep the clients refreshed about their home security with a choice of controlling the exchanging of the gadgets by utilizing their voice or straightforward switch address their cell phone, and last yet above all, screen the utilization so as to save the valuable characteristic assets by lessening electrical vitality utilization.***

Keywords—Ethernet, Internet of thing (IoT), Power consumption, Smart devices, Home automation, Security Systems, Android device.

I. Introduction

The Internet of Things is the system of "things" which are associated with a typical system way so as to impart, trade information or control one another. The system way can be interconnected or interconnected with the "things" being either embedded software, hardware or any sensor. It alludes to the state where the things will have an ever increasing number of information and data related with them and have a capacity to impart, produce new data and turn into the fundamental piece of t[illegible] free internet. It highlights Internet network as well as highlights cloud and information the executives, security the executives and every single other field worried about the time of Internet.

These days, there is a developing interest of computerization and insightful frameworks so it abandons us with less human mediation and brilliant basic leadership gadgets. With the time tracking and monitoring of the electrical devices and security of the house.

II. Related Work

Internet Of Things and Mobile registering are the drifting advancements in the IT field. The developing utilization of cell phones requests the designers for all the more better and easy to understand application. A method for associating your inside effective just as easy to understand models. This has made our lives less demanding from making our smart travel courses of action to our own therapeutic consideration. With a tap of your finger you can control your lights, with a solitary

tap you can book your flight tickets, screen traffic and climate, etc. It will refine our work processes, organizing errands and undertakings dependent on continuous evaluations progressively of what's going on all through our association. The Internet of Things will keep up our apparatuses and vehicles, deciding when they are next due for administration, cleaning, or – on account of our coolers – restocking (and making proper game plans, for example, fix arrangements and basic supply orders). It will empower our autos to speak with different vehicles out and about as they self-drive us back and forth. It will control our lights, warmth, AC, and other home machines and gadgets, turning them on and off as we go into and leave rooms and as they "learn" our calendar. Also, that is not all.

Get a good deal on vitality use, while keeping your office or building agreeable. The expense of essentially neglecting to kill your classroom lights and electric apparatuses can truly include after some time. Controlling temperature and lighting dependent on time of day or inhabitance can truly diminish vitality costs. Mechanizing your warming and lighting frameworks enables you to hand over the normal tasks to a keen framework and expel the expense of human blunder. Have your frameworks set naturally, or supersede the principle settings with simple controls – Touch screens, is never again only for greenies, with the commonplace family control bill has ascended by 78% in under an Internet, Internet-empowered telephones, or even the workplace phone. Canny building productivity isn't simply consigned to workplaces. As vitality costs rise and wages are crushed, home mechanization frameworks will turn into an all the more alluring venture as their proficiency improves and costs decrease because of development and scale.

This paper proposes an IoT based shrewd and keen vitality and security the board framework to independent power control framework in an easy to use and a portable way with the goal that a client can deal with the power the executives just as security of their home notwithstanding when not at the house itself, limiting the power utilization and augment usage of asset by brilliant genuine. and out gadgets by your versatile is additionally drifting nowadays. In this way a great deal of open source applications have come into market giving highlights from voice acknowledgment, signal control etc. This portable

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Trends in Machine Learning for Fully Automated Home Appliances

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Abstract: ***Due to technological growth in electronic devices leads the human to belong to usage of machines. This Machine development also stated with manual operation, semi-automated and fully automated. Especially this technological development place a major role in home appliances like washing machine, television, air conditioner, heater and other home appliances etc. These machines were initially developed to provide solutions for needs, but day by day with the development of artificial intelligence these machine also developed to work with sense. For instance washing machine can has evolved from manual operation to fully automated operation. This article will elaborate the machine learning technique can also be adapted to the home appliances and make the machine to work with sense without programming. The design model of fully automated home appliances is elaborated with the proposed architecture.***

Key Words: Home Appliances, Decision Tree Learning, Association Rule Learning.

I. Introduction

A computer has an ability to learn without direct programming is called as Machine Learning. This technique was come in to the world in the year of 1959 an American Innovator names as Arthur Samuel who had been working in IBM. Machine learning technology which comprises of three technological fields is Artificial Intelligence, Pattern Recognition and Computational Learning. So the machine learning can be done the role of construction of algorithm and make decisions.

Machine Learning is also not limited with the three technological field also closely related with the mathematical field like statistics and strong ties with mathematical optimization theory of computation etc. These technical details will collect collection of information which is also tied with data mining principles to take decisions which will be done without programmed through unsupervised learning. Machine learning also developed to work with the strategy of prediction methods by using data analytic. Many researchers who are all in the field of data scientists, engineers and analysts are endorsed to promote the machine learning technique.

During the period of 2016, machine learning becomes more popular with gartner graphical representation called hype cycle. Even though the acceptance in machine learning which is difficult and hard to find the decision pattern , also not able to provide efficient data , from which machine learning programming was declared as weakening technology. The Machine learning was implemented in computer programming which learn experience E based on the task T and performed task T then modified the learned experience E. Machine learning with Intelligence is called Thinking machine.

Classification of Machine Learning is into three categories like supervised learning, unsupervised learning and reinforcement learning. The first classification is works on the input and output decision given by the trainer the machine will react. Next classification in controversy with first classification works without any input and output decisions, machine can work to find own structure of the input. The last classification is machine can interact with a dynamic environment must perform certain goal.

II. Related Work

To accomplish the proposed work the following area related works are considered.

Decision Tree Learning

Decision tree is a specialized tree where leaves represent the labels and branches represent conjunction also called classification tree. Decision tree collect the list of items and conclusion about the target value. Collection of data's are recorded in the form of $(X,Y) = (x1,x2,x3, \ldots x_k, Y)$.

Depending on the value of the variable decision is selected.

X consists of x1, x2, ...xk.

To understand the impurity of gained set of items with collection J, and i belongs to { 1,2,....J}

$$I_G(p) = \sum_{i=1}^{J} p_i(1-p_i) = \sum_{i=1}^{J}(p_i - p_i^2) = \sum_{i=1}^{J} p_i - \sum_{i=1}^{J} p_i^2 = 1 - \sum_{i=1}^{J} p_i^2 = \sum_{i \neq k} p_i p_k$$

Association rule learning

It is a method of discovering relationship between the data collection. Rule is defined as

Let I ={ i1,i2, ...in} be a set of n binary attributes called mining. Let D = {t1, t2....tm} be a set of transaction called the data base. The rule is defined as an implication of the form. X implies Y where X,Y belong to I

III. Proposed Architecture

In the modern technological development leads the number of users involves to use all kind of home appliances.

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An IOT Based Automatic Vehicle Mishap Recognition and Alerting Framework

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Abstract: In exceedingly populated Countries like India, regular individuals lose their lives in view of mishaps and poor crisis offices. A portion of the salvage groups face trouble in contacting the harmed individuals to due late alarms and lacking data of the particular mishap area. The coming of the cell phone and Internet of Things (IoT) businesses reshaped the manner in which individuals convey and conveyed a change in outlook to open and private administrations. This consistently developing innovation denoted the start of new time influencing the lives of individuals also, different organizations. This paper express to give an answer for such an issue we are going to proposed an IoT framework which right away advises the Public Safety Organization (PSO) headquarter at whatever point a mishap happens and pinpoints its geographic arranges on the guide. At the point when a mishap happens, a vibration sensor recognizes it. At that point, a calculation is connected to process the sensor flag and send the geographic area alongside some therapeutic data of travelers to the server, showing mishap event.

Keywords : ***Public Safety Organization, cell phone, Internet of Things***

I. Introduction

Cell phone based mishap recognition applications have the two points of interest and impediments with respect to traditional in-vehicle mishap location frameworks, e.g., they are vehicle-autonomous, progressively unavoidable, and give rich information to mishap examination, including pictures and recordings. Building a Smartphone-based mishap identification framework is hard, nonetheless, in light of the fact that telephones can be dropped (and produce false positives) and the telephone isn't specifically associated with the vehicle. Conversely, customary in-vehicle mishap discovery frameworks once in a while bring about false positives since they depend on sensors, for example, accelerometers and airbag sensors, that straightforwardly identify harm to the vehicle[5]. The timeinterval between the event of a mishap and the landing of an emergency vehicle is basic in diminishing the death rate. The casualties of the mishap might be in an oblivious state, and can't be relied upon to ring the crisis administrations control room, when a mishap occurs. Thus, an in-vehicle mishap recognition module can be used[3]. Further, in a nation like India, where the observers are relied upon to advise the crisis administrations control room when a mishap happens, a great deal of postponement can happen[4].

In India, it takes 30 seconds on a normal for the Communications Officer to gather significant data, and three minutes for the Dispatchment Officer to dispatch an emergency vehicle to the area. Further, the rescue vehicle driver needs to distinguish the mishap area dependent on signals given by the officer and sail through the substantial traffic. It takes an additional 48 hours after the mishap to direct afollow-up to check the effect of the care[6]. A great deal of postponement emerges in every single stage because of the human component included. In this paper, we propose a framework that can astutely identify mishaps, and dispatch and guide the closest rescue vehicle to the mishap area with insignificant defer included. Before moving into the subtleties of the proposed technique we quickly audit the related writing.

2. Related Work

- **An IOT Approach to Vehicle Accident Detection , Reporting and Navigation[20]**

One specific worry that Public Safety Organizations (PSO) must record for while taking part in numerous exercises is diminishing the impact of vehicle mishaps, supporting however many harmed individuals as could reasonably be expected and giving day in and day out on the spot salvage. The Red Cross philanthropic association is a standout amongst the most known PSOs to be available on location at whatever point a mishap or a calamity happens. In any case, a portion of the salvage groups face trouble in contacting the harmed individuals to due late alarms and lacking data of the particular mishap area. The appearance of the cell phone and Internet of Things (IoT) businesses reshaped the manner in which individuals convey and conveyed a change in perspective to open and private administrations. This innovation denoted the start of new period influencing the lives of individuals and different organizations. This paper passes on a shrewd and dependable IoT framework arrangement which in a split second tells the PSO headquarter at whatever point a mishap happens and pinpoints its geographic coordinateson the guide. At the point when a mishap happens, a stun sensor identifies it. At that point, a calculation is connected to process the sensor flag and send the geographic area alongside some auxiliary data to the PSO headquarter, showing mishap event. This is a promising

Distributed Load Balancing Algorithm for Wireless Sensor Networks

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ABSTRACT— *A remote sensor arrange (WSN) comprises of spatially scattered independent sensors to screen physical or ecological conditions and to amiably go their information through the system to a Base Station. Clustering is a basic undertaking in Wireless Sensor Networks for vitality effectiveness and system quality. Clustering through Central Processing Unit in remote sensor systems is notable and being used for quite a while. In this paper, we propose a few techniques that balance the vitality utilization of these hubs and guarantee most extreme system lifetime by adjusting the activity stack as similarly as would be prudent. By and by Clustering through conveyed techniques is being created for appropriating with the issues like system lifetime and vitality. In our work, we connected both incorporated and dispersed k-implies Clustering calculation in system test system. k-implies is a model based calculation that surrogates between two noteworthy advances, passing on perceptions to groups and processing Cluster focuses until a ceasing standard is satisfied. Reproduction results are achieved and related which demonstrate that appropriated Clustering is powerful than centralized clustering.*

Keywords-DLB(Distributed Load Balancing) ,WSN, wireless sensor network; clustering; ns-2; k-means; network stability

I. INTRODUCTION

Remote sensor organize (WSN) contains of two classes of hubs, in particular essential and optional hubs. Essential hubs all around selected with sensor and radio framework. The Secondary hubs are essentially the sending hubs which have a radio alone to go about as discontinuous (connect) hubs. These hubs made animated the development of remote sensor systems (WSNs) in applications including ecological observing, war zone investigation, atomic, natural and compound assault recognition, social insurance and home applications. WSN is made with the controls out of constrained vitality [1], memory [1], handling power [2], and data transmission for correspondence [2], and radio range [2]. As sensors must work under strict power requirements, transmitting data detected to end station might be infeasible. This moves to scan for making assets by utilizing Clustering calculations sharing data in single-bounce neighbors as it were. Clustering is the mix of comparative items and a grouping of a set is a segment of its components that is chosen to limit some proportion of variety [3]. Clustering calculations are regularly valuable in applications in different fields, for example, man-made reasoning, perception, learning hypothesis, PC illustrations, neural

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Research Article

AN AUTOMATED DECISION MAKING DATA MINING SYSTEMS IN ALL GAMES WITH OUT UMPIRES

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ABSTRACT

Now a days the technology in the present world is an edge cutting in nature. The transformation of the technology is at various dimensions. Computing the data and the process of data and its interpretation is changing around the time in nature at its occupancy in the world. Computation of the data is transforming to a greater extent from the Grid to Cloud computing at high speed. The technology available today is not only a data processing one it has various dimensions and applications at which the performance of the these software's are achieving a higher accuracy and greater results. These technologies can also be implemented in sports which are a modern war fields. Games such as Football, Rugby, Hockey, and Cricket, Tennis and many other Team and single player games are being considered as prestige to their countries. The Judges or the umpires in those games have a great deal and value for their decision and sometimes their fault would turn the nature of the game. This research work is purely focused on the automated decision making in sports purely levering Ubiquitous Computing. Cricket is primarily a popular game in the eastern countries and now a more popular one after football is chosen for implementing this idea of automated decision making. The main objective of this paper is to achieve certain goals 1) Make a decision where a human error makes errors due to limitations. 2) Simulate the Match activity during and after the game in a 3D computerized Graphics system. 3) Make various types of game and performance analysis of a certain team or a player.

INTRODUCTION

A person who follows sports like Cricket knows the value of the decision made by the umpire. At crucial situations in games a wrong decision makes the game an injustice to a team it has the same effect of winning and losing the game is spoiled, a big disappoint to the fans. Sports science makes the major parts of the game as activities such as practice during and after competition[1][4]. Computer-based and semi- automated observational system support coaches by combining quantitative statistics with qualitative video analysis [1]-[3]. A number of misjudged decisions by umpires due to incapability or simple carelessness led to totally spoiled matches. There are numerous examples which one can quote in this respect.

"Test in England where an umpire gave three batsmen out on no-balls. TV replays showed that the bowlers had clearly violated the no-ball rule but no one called it [1], [2]. Past has many examples about these wrong decisions where the basic rules were also ruled out. In these decisions maximum part of the important decisions involve the decision to make weather a batsman was given out or not especially decisions such as LBW, RUNOUT, CAUGHT OUT, STUMPED.

There are some decisions to be made at the bowler end also such as NOBALL, WIDE, BOUNCER. A series of cricket matches (VB Series 2005) played between West Indies, Australia and Pakistan teams, at the end Australia won but what happened? "Pakistanis claimed umpires favor vocal Aussies". Many other examples are there where game is affected badly due to wrong decisions of umpires and these decisions are not only taken once but repeated many times cautiously. There are some ODD decisions to be taken by the umpire in judging the BOUNDRIES and SIX and CATCHES take at boundary line. The fielding rules are also to be watched out by the umpire.

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Change Requests Artifacts to Assess Impact on Structural Design of SDLC Phases

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ABSTRACT

Current escalating demands on software, software developers to be obliged to generate software that can be altered, which escape from the risk of mortifying the software structural-design of the "SDLC phases". Degraded software structural-design is problematic because it makes the system more prone to defects and change requests turn to be costlier. The impacts of change requests to software can be hard to determine. One way to determine these consequences is to artifact the causes and effects caused by change request. A software change artifact allows to assess the effects of a change using different criteria such as causes to apply the change to be requested, change request type and the software module influenced by that changes. Once these artifacts identified then these artifacts can be used to scale the potential impact of the change. Another benefit of defining artifacts of the change-requests are that it allows engineers to develop a common approach to deal with changes that have similar in defined artifacts, rather than addressing each change individually. This paper introduces a mechanism that defines artifacts of the change-request to assist developers in measuring the impact of a software change on the structural-design of the SDLC-phases.

Keywords:

Artifact, change request, SDLC, software engineering, risk prediction

1. INTRODUCTION

To begin development, a set of requirements must be agreed upon by the developer and the customer. He stated that the software undergoes never-ending maintenance and development that is driven by the difference between its current capability and what is required by the ever-changing environment [1]. It is the foundation for the development of budgets, schedule, tests, and design [2]. Therefore, developers must have effective mechanisms to manage the change process [3]. It has been hypothesized that, likely increase in cost to handle the defects in the process of software development, a potential change in software requirements applied later in the life cycle will be more difficult and costly to implement [4]. The environment change could require changes in protocols and standards necessary for communication with other systems. Software requirement changes are common and frequent in different phases of the life SDLC. A change request should contain all the information necessary to modify the requirements to achieve the desired functionality [5]. There are many reasons why software must change to accommodate these differences. In fact, it is likely that more than half of the system requirements will change before deployment [6]. Managing customer requirements is one of the key problem areas in software system development and production [6]. Ideally, developers prefer to create a set of requirements that are stable, which is not practical.

Change management is one of the most important aspects of a successful software development project. Manny Lehman aimed to describe common issues concerning software systems that change.In this regard created software evolution laws. Developers must also be aware of the risks associated with changes. Requirements engineering is the basis for software development. A change request is a requirement to add to initial requirements, which also includes a change request related to hardware[2]. Software, regardless of the precision of the development process or the depth of problem understanding by the developers, will change. But, it is often impossible to make all the correct requirements and implementation decisions at the beginning [7]. Hence the risk increases as development progresses.

Because of these divergent changes, the change request analysis should ensure to predict the risks possible with regard to apply the change requirement.

2. RELATED WORK

To assess the impact and risk associated with change requests to software can be classified with currently existing classification schemes. These classifiers mainly classify the impacts due to change requests. The functional aspects of these classifiers can be observed in the literature as

- Determining risks associated with change request and identifying the scope of acceptability of the change request.
- Allowing engineers to group changes based on different criteria such as the cause of the change, the type of change, the location where the change must take place, and the potential impact of the change.
- Allowing engineers to develop a common approach to deal with similar changes, resulting in less overall effort required than if each change was addressed individually [8].

Lientz et al [9] work identified the frequency of the different types of maintenance activities performed by a large sample of software development organizations. Based on their work and work by Sommerville et al [10], the major types of changes related to perfection, correction, adapt and prevent have been identified. Changes related to Perfection are the result from changes adopted during the SDLC process. These changes aimed to advance the system to achieve scalability in

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Current Areas and Challenges of Data Mining Research

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Abstract: The paper describes different aspects of data mining research. Data mining is helpful in acquiring knowledge from large domains of databases, data warehouses and data marts. Different and current areas of data mining also discussed. Issues and challenges of data mining along with various open source tools are addressed as well. Data mining is an important and evolving research area and used by the biologists to statisticians and computer scientists as well.

Keywords: data mining, knowledge discovery in databases, areas and tools in data mining, challenges of data mining.
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Introduction

Data mining is extracting information and knowledge from huge amount of data. Data mining is an essential step in discovering knowledge from databases. There are numbers of databases, data marts, data warehouses all over the world. If the data are not analyzed to find out the interesting patterns, then the data would become data tombs. Data miners seek for the pearlintheseaofdata.Adataminingsystemmay generate lots of patterns. Typically a small fraction of the patterns are interesting. Here the interesting means useable, valid and novel. Moreover, it is almost impossible to extract the interesting hidden patterns in the sea of data without the help of data mining tools. There are seven steps in data mining. They are data cleaning, data integration, data selection, data transformation, data mining, knowledge presentation and pattern evolution [7].

Database technology had evolved from primitive file processing to the development of data mining tools and applications. The data may be collected from various applications including science and engineering, management, business houses, government administration and environmental control. Interesting data patterns may be mined from spatial, time-related, text, biological, multimedia, web and legacy databases. Data mining facilitate management in decisionmaking. The data mining job includes the discovery of concept descriptions, association, classification, prediction, clustering, trend analysis, deviation analysis and similarity analysis. Data mining in large databases poses various requirements and challenges for the researchers and developers. A multidimensional data model is used for the design of data warehouses and data marts. The core of such model is data cube [7]. Data cube consists of large set of facts

And number of dimensions. Dimensions are the entities on which an organization keeps records.

Different Areas of Data Mining

Web Mining

As there is huge amount of data and information available in the World Wide Web, the dataminers have a fertile area for web mining. Web mining is data mining techniques for extraction of information from web documents and services. The contents of the web are very dynamic. It is growing at a rapid pace, and the information is continuously updated. Web mining may be divided into the following subtasks [2].

1. Resource finding: finding documents intended for the Web.
2. Information selection and preprocessing: Selection and preprocessing of the information retrieved from theWeb.
3. Generalization: To discover the general patterns from the individual as well as multiple sites.
4. Analysis: Discovered patterns are interpreted for meaningfulknowledge.

Web mining may be divided into Web Structure, Web Contents, and Web Access Patterns.

Text Mining

The term text mining or KDT (Knowledge Discovery in Text) was first proposed by Feldman and Dagan in 1996[2].The unstructured text may be mined using information retrieval, text categorization, or applying NLP techniques as a preprocessing step. Text Mining involves many applications such that text categorization, clustering, finding patterns and sequential patterns in texts, computational linguistics, and associationdiscovery.

Spatial Data Mining

The spatial data mining deals with data related to location. The explosion of geographically related data for rapid development of IT, digital mapping, remote sensing, GIS demands for developing databases for spatial analysis and modeling. Spatial data description, classification, association, clustering, trend, and outlier analysis are the main components for spatial datamining.

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Data Mining using Repeated Labeling Technique for Predicting Unknown Class Label

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Abstract : The current topic is discussing about predicting the class label attribute for the number of unknown samples is not correct. So we are going to describe the Repeated Labeling Technique to increase the efficiency, robustness and quality of the data for supervised learning methodology. With the outsourcing of small tasks becoming easier, for example via Rent-A-Coder or Amazon's Mechanical Turk, it of ten is possible too btainless-than-expert labeling at low cost. With low-cost labeling, preparing the unlabeled part of the data can become considerably more expensive than labeling. We present repeated-labeling strate- gies of increasing complexity, and show several main results. (i) Repeated-labeling can improve label quality and model quality, but not always. (ii) When labels are noisy, repeated labeling can be preferable to single labeling even in the tradi-tional setting where labels are not particularly cheap. (iii) As soon as the cost of processing the unlabeled data is not free, even the simple strategy of labeling everything multiple times can give considerable advantage. (iv) Repeatedly labeling a carefully chosen set of points is generally preferable, and we present a robust technique that combines different notions of uncertainty to select data points for which quality should be improved. The bottom line: the results show clearly that when labeling is not perfect, selective acquisition of multiple labels is a strategy that data miners should have in their repertoire; for certain label-quality/cost regimes, the benefit issubstantial.

Categories and Subject Descriptors

H.2.8[**DatabaseApplications**]:Datamining;I.5.2[**Design Methodology**]: Classifier design andevaluation

GeneralTerms

Algorithms, Design, Experimentation, Management, Measurement, Performance

Keywords

data selection, data preprocessing.

1. Introduction

There are various costs associated with the *preprocessing* stage of the KDD process, including costs of acquiring features, formulating data, cleaning data, obtaining expert labeling of data, and soon[31,32]. For example, in order to build a model to recognize whether two products describe don't webpages are the same, one must extract the product information from the pages, formulate features for comparing the two along relevant dimensions, and label product pairs as identical points. To build a model that recognizes whether an image contains an object of interest, one first needs to take pictures inappropriate contexts, sometimes at substantial cost. This paper focuses on problems where it is possible too- certain (noisy) data values ("labels") relatively cheaply, from multiple sources("labelers"). Again focus of this paper is the use of these values as training labels for unsupervised mod- eling.[1] For our two examples above ,once we have constructed the unlabeled example, for relatively low cost one can obtain non-expert opinions on whether two products are the same or whether an image contains a person or a storefront or a building. These cheap labels may be noisy due to lack of expertise, dedication, interest, or other factors. Our ability to perform non-expert labeling cheaply and easily is facilitated by on-line outsourcing systems such as Rent-A-Coder[2]and Amazon's Mechanical Turk,[3] which match workers with arbitrary (well-defined) tasks, as well as by creative labeling solutions like the ESPgame.[4]

In the face of noisy labeling, as the ratio increases between the cost of preprocessing a data point and the cost of labeling it, it is natural to consider *repeated labeling*: obtaining multiple labels for some or all data points. This paper explores whether, when, and for which data points one should obtain multiple, noisy training labels, as well as what to do with them once they have been obtained. Figure1 shows learning curves under different labeling qualities for the *mushroom* data set (see Section4.1). Specifically, for the different quality levels of the *training* data,[5]the figure shows learning curves relating the classification accuracy of a Weka J48 model [34] to the number of training data. This data set is illustrative because with zero-noise labels one can achieve perfect classification after some training, as demonstrated by the $q = 1.0$curve. Figure1illustrates that the performance of a learned model

Detecting Stress Based on Social Networking Interactions

P.C.Senthil Mahesh, Ch.Rupa Kalpana, M.Rudra Kumar

Abstract*: Stress is a kind of demand to respond to any in your body's manner. It can be based on experiences that are both good and bad. Psychological stress threatens the health of individuals. People are used to exchanging their schedule and daily operations with colleagues on social media platforms with the reputation of a social media network, creating it possible to hold online social network information for stress detection. For a variety of applications data mining methods are used. Data mining plays a significant role in the detection of stress in sector. We proposed a new model in this article to detect stress. Initially, in this model, discover a correlation between stress states of user and effective public interactions. This describes a set of textual, visual and social characteristics related to stress from different elements and proposes a new hybrid model coupled with Convolutional Neural Network (CNN) to efficiently hold tweet content and data on social interaction to detect stress. The suggested model can enhance the detection efficiency by 97.8 percent, which is quicker than the current scheme, from the experimental outcomes.

***Keywords* : Stress, Social Networking, Attribute Extraction, Factor Graph Construction and Stress Discovery**

I. INTRODUCTION

The Psychological stress nowadays becomes a threat to the health of people. More and more individuals are feeling stressed with the fast pace of life. According to a global study published in 2010 by New business, over half of the population has suffered a significant increase in stress over the past two years. In spite of the fact that pressure itself isn't clinical and predominant in our lives, over the top and constant pressure can be unfavorable to the physical and psychological well-being of individuals. Long-term pressure has been found to be related with numerous ailments, for example, clinical sorrow, a sleeping disorder, and so on., as indicated by current examination works.

Also, suicide has turned into the main source of death among Chinese youth, as per study, and extreme pressure is respected a critical suicide factor. These demonstrate that quickly expanding pressure has turned into a noteworthy test for human wellbeing and nature of life. Therefore, stress location is significant before it transforms into major issues. Customary recognition of mental pressure is fundamentally founded on up close and personal meetings, polls of self-report or wearable sensors. Customary methods, be that as it may, are in truth responsive, for the most part work devouring, tedious, and hysteretic. Internet based life's expansion is changing the lives of individuals, just as human services and health examines.

College can be stressful for many newcomers as they face a range of academic, personal and social stresses. Although not all stress is negative, it may be useful to assist enhance efficiency with a certain level of stress. In the American Freshman's annual survey, however, too much stress can adversely impact health; the number of learners recorded feeling overwhelmed and stressed has steadily risen over the past decade. Over 50% of university learners in a typical university semester experience important pressure.

Consequently, it is necessary to discover innovative and cost-effective strategies to assist define those learners with elevated rates of stress and adverse feelings early on so that they can receive adequate therapy to avoid future mental illnesses. The use of social media, such as Twitter and Facebook, has grown quickly, and study has shown that information from these teachings has already increased. Young adults ' use of Twitter improved by 16 percent from 2012 to 2014. Currently, Twitter is used by 32 percent of adolescents aged 18-29, and use is anticipated to raise steadily in the future. People often need to communicate their feelings and experiences. Researchers have theorized that emotional sharing by attracting attention, affection, and social support can satisfy a socio-affective need. This can therefore assist people deal with their feelings and provide instant relief. Users often communicate their ideas, emotions and views on these social media platforms, and as a consequence, social media information can be used to provide learners with real-time stress and mental tracking.

Previous studies have shown that Twitter information can be used to monitor a broad variety of health results such as identifying outbreaks of infection with human immunodeficiency viruses and predicting the risk of depression for an individual. De Choudhury et al, for example, conducted one of the first studies that used tweets from an individual to predict the risk of depression. The writers discovered that some characteristics obtained from a person's tweets gathered over a1-year period were strongly correlated with adult danger of depression, such as elevated adverse feelings in tweets, frequent references to antidepressant medication, and increased expression of religious participation.

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Dynamic Queue Management For Optimized Qos In Manets

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Abstract : This paper explores a Queue based management approach for optimized QoS in MANETs. This presents a dynamic Active Queue administration scheme for traffic control in the presence of static and mobile infrastructure network environments. This strategy was proposed to manage efficiently both priority-based and non-priority-based communications. This guarantees a minimum operational resource for communication over MANET. The non-priority-based communication is anticipated to absorb the drawbacks of reduced connectivity during ultimate period of congestion. This appears as desirable QoS progress towards optimized MANETs in inadequate, unstable network situation.

Index Terms: QoS, Manets, Optimized QoS, Delay and Queue Management.

1. INTRODUCTION

Mobile Ad hoc Network is a recurrently self-configuring network possessed of a standard set of mobile devices which can converse between them without infrastructure attached wirelessly. Each device organized in a MANET remains unrestricted to be in motion alone in any route, and so change its associations to other devices often. The most important task in constructing a MANET is furnishing each device to endlessly maintain the information requisite to accurately route traffic. Queue Management stands the clever droplet of network containers inside a buffer allied by a NIC, once that buffer become full or gets nearby to becoming filled, often with the objective of reducing network bottleneck. This job is accomplished thru the network scheduler that can use a number of algorithms such as Random Early Detection (RED), Explicit Congestion Notification (ECN) and/or Controlled Delay (CoDel)

2 RELATED WORK

Since ECN comprises better result in Queue Management policy, the benefits of ECN rest on the defined AQM being used. A few notes, however, appear to hold across different AQMs. As anticipated, ECN cuts the magnitude of packets dropped by a connection, which avoids retransmission there by diminishes latency and especially jitters. This result is most drastic while the TCP connection has a single exceptional segment, when it is able to evade an RTO timeout; this is habitually the case for interactive network communications, for example remote logins and such as HTTP requests, or SQL requests. The outcome of ECN on bulk throughput remain less clear since modern TCP applications are fairly worthy at retransmission of dropped segments in an apt manner once the sender's window is outsized. Practice of ECN has been recognized to be disadvantageous to performance on extremely congested networks. Modern AQM applications elude this drawback by dropping instead of marking packets at excessive load.

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AQOR (Adhoc QOS On-Demand Routing) discovers the best available route that has the smallest end-to-end delay with a bandwidth guarantee. A route request packet that carries the requested bandwidth and the end-to-end delay constraint is sent out via flooding communication to its next hop. When an intermediate node receives the route request packet, it rebroadcasts the route request to its next hop only if the bandwidth requested can be fulfilled and the delay constraint is not violated. Since the flooding approach is used, there might be multiple request packets arrive at a destination node.
DA-AODV (Delay Aware AODV) is another extension of AODV that takes the delay requirement from applications. During the route discovery process, the accumulated delay along the path from a source to a destination is recorded in the routing table of each node. When an application requests a route to a destination; the delay requirement of the application is compared to the delay recorded in the routing table to check if such a route exists. The route will be selected if the delay requirement is fulfilled. DA-AODV has been extended to include multi-path support and the extension is named DAAM (Delay Aware AODV-Multi-path).

Stochastic fair Blue (SFB) hashes traffic flows and preserves a different mark/drop possibility for each hash value. Suppose if no hash collisions, SFB is capable to deliver a fair part of buffer space for every traffic flow arrived. In the incidence of hash collisions, SFB is simply incidentally fair. Unlike other similar disciplines, such as SFQ (Stochastic Fairness Queuing) SFB can be applied with a bloom filters instead of a hash table, which radically decreases its storage necessities while the quantities of flows are bulky. When a flow's drop/mark probability ranges 1, the flow has been displayed to not respond to congestion symptoms commencing from the network. Such an inflexible flow is placed in a "penalty box". A Resilient Stochastic Fair Blue (RSFB) procedure was offered in contrast to spoofing DDoS attacks, which accounts the responsive usual TCP flows and rescue their dropped packets. RSFB process is competent in stabilizing the TCP throughput in the existence of spoofing DDoS occurrences.Differentiated Services implements per hop behaviors, it should mark messages with the appropriate DSCP bits. However in a MANET, this infrastructure nodes might be take part in the network, making non reliable, the needed types in the IP header. The non-infrastructure nodes could simply alter them in order to prioritizing packets without being part of the prioritized nodes. AHRED (Ad hoc Hazard RED)[5] is another RED variant that has been proposed for wireless ad hoc networks. AHRED uses mechanism similar to RED to mark or

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5g Standardization Initiatives towards 5g Wireless Access Technology

Monelli Ayyavaraiah

ABSTRACT: ***The best largely favoured program architecture in IoT is the Service Oriented Architecture (SOA), which aims to deliver a loosely paired devices to utilize the usage as well as reuse of IoT companies at the middle-ware level, to decrease device combination issues. What is the most unique attribute of this paper, compared to various other study and also tutorial jobs, is the in depth presentation of the interior programs and also mechanisms of the system protocols based on IPv6. This paper gives 5G standardization projects in the direction of 5G cordless accessibility innovation.***

Index Terms : Internet of Things, 5G, IoT System

I. INTRODUCTION

The dream of a worldwide media platform based on the smart objects interaction has actually already brought in a big leap ahead. The supposed Internet of Things (IoT) modern technology turns into a necessity for modern-day culture, where folks and also things are virtually combined, forming thereby details bodies, with cordless sensing unit nodules and networks [1] This innovation will lead the way to the progression of brand new apps and also services, which are going to be able to utilize the connection of bodily as well as digital bodies [2]

The IoT paradigm depends on existing communication innovations including Bluetooth, ZigBee, Wi-fi, and Long-term Evolution-Advanced, only among others. However, developing an appropriate and good IoT body, based on these different technologies, appears a burdensome problem. The regulation of IoT is actually crucial in providing enhanced interoperability for all sensing unit tools as well as objects, which additionally require an identification administration system. Furthermore, network protection as well as data discretion increases significant issues [3] Lastly, reliable power and also records manage- ment devices are actually called for, along with the aim of greening the IoT units. Each one of these challenges need to be dealt with according to the embraced form of networking innovations. Although many researches have been actually administered concerning the IoT interaction technologies, none of them deals with the IoT system coating, additionally called sending level,

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and also its innovations. Extra specifically, in [5], current and also emerging innovations for supporting
wide region Machine-to-Machine (M2M) systems based upon IoT devices existed as well as was concentrated on the standards for IoT in the fields of data communications, solutions, and support for (M2M)/ IoT applications

The writers in [4] provided a summary of the making it possible for applications, methods, modern technologies, and also the current research undertakings which add- gown several aspects of IoT. In [5], a short introduction of the IETF method collection was proposed to assist IoT tools and applications. Likewise, various specifications given by the Internet Engineering Commando, the Institute of Electrical and Electronics Engineers (IEEE), and also the International Telecommunication Union (ITU) for the IoT were discussed. Moreover, [6] was paid attention to the development of Wireless Sensing unit Networks, as a crucial component of the IoT architecture, while outlining a platform capable to blend new IoT installments as well as non-IP implementation.

An example of IoT-enabled environment is an incorporated transportation system that may be dynamically directed as well as reorganized in reaction to modifying traffic demands and also ailments. In medical care, IoT has actually been actually utilized to follow-up on client rehabilitation and also to evaluate that versus a lot of specifications special to the patient due to the use IoT enabled tools. The information acquired may also be used to review individual responses to therapy in different environmental contexts on a global range. Smart IoT gadgets may additionally be actually utilized to observe and manage power usage. In horticulture as well as food manufacturing, IoT could be made use of to deal with manufacturing through monitoring as well as monitoring variables that determine meals development like weather condition, politico-economic indicators, organic calamities, intake, plant as well as animal health conditions, and so on. In assisted lifestyle, an universality of IoT tools and also services can easily assist to deal with the necessity for individual living for the increasing varieties of individuals coping with physical disability, long-lasting disorders, social as well as age-related issues.

The bodily picking up level consists of inserted gadgets that use sensors to collect real world information. The portal coating delivers the device and procedures for devices to subject their sensed data to the Internet (e.g. Wi-Fi, Ethernet, GSM, etc.). The middle-ware coating helps with and also deals with the communication between the real world picked up tasks and the treatment layer. The treatment level maps onto uses that could be made use of due to the buyer to send demands to actual word items online by means of mobile phone treatments, webapps, and so on.

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Cyber Attack Detection using Deep Learning Methods

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ABSTRACT: False information infusion (FDI) assaults are a group of new assaults that have been viewed as the most perilous digital assault as it prompts fell awful basic leadership all through the system, which can prompt serious repercussions. The ordinary state estimation and terrible information location procedures, which have been connected to diminish perception blunders and distinguish awful information in vitality framework state estimators, can't recognize FDI assaults. Here, we bring into play a target looking for framework to go about as the chief of the system. To this end, we propose to present another measurement for the entropic state. The entropic state has two purposes: 1) it gives a sign of the network's wellbeing on a cycle-to-cycle premise and 2) it very well may be utilized to distinguish FDI assaults. Therefore, improving the entropic state is the objective of the manager. To accomplish that objective, the boss powerfully enhances the state estimation process by reconfiguring the loads of the sensors in the system. In view of optimality, the CDS is the unrivaled decision for the supervisory framework. In this structure, the CDS cooperates with the system, which is considered as the earth. PC recreations are completed on a 4-transport and the IEEE 14-transport frameworks to feature the exhibition of the proposed methodology in distinguishing both awful information and FDI assaults, individually.

KEYWORDS: False data injection, objective seeking, Cognitive Dynamic System.

I. INTRODUCTION

The standard objective of AI is to set up an utilitarian association between data and yield exercises in order to obtain an auto-getting ready capacity for instances of data inputs. In perspective on whether the data is stamped or not, AI can be ordinarily masterminded into two social affairs: oversaw and unaided learning. In oversaw taking in, the goal is to develop a limit from named planning data (information and yield data), while solo learning is to accumulate an ability to depict the hid structure from unlabeled data.

To make it less difficult and progressively normal to participate with robots, people put forth new demands to human robot joint effort. It is believed that robots can see human's outward appearances, appreciate sentiments and give legitimate response.

The Cognitive Dynamic System (CDS) is a composed physical model and research instrument that reenacts certain highlights of the mind. Compact discs was first acquainted with the building scene and after that extended. Since its first applications in psychological radio and subjective radar CDS has developed immensely through the span of time to offer ascent to Cognitive Control (CC) and Cognitive Risk Control (CRC) as two of its unique capacities. While the CRC includes the standard of prescient adjustment, which is new to designing writing, the fundamental focal point of this paper will be focused towards the combination of CC, considered as the overall capacity of the CDS, with the Smart Grid. From a neuroscience perspective, the CDS depends on Faster's worldview of insight including the accompanying five standards: observation activity cycle (PAC), memory, consideration, knowledge, and language. In its most perfect structure, the CDS is made of two fundamental parts: the preceptor, on one side, and the official on the other with the criticism channel uniting them. From a building viewpoint, CC is all around organized to deal with a

Efficient Scalable Group Communication Using Multicast Routing Protocols

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Abstract : In this paper we propose a new multicast protocol for multihop mobile wireless networks. Instead of forming multicast trees, a group of nodes in charge of forwarding multicast packets is designated according to members' requests. A location service for ad hoc networks is a distributed algorithm that allows any source node s to know the location of any destination node t, simply by knowing t's network identifier. A location service has a locality aware lookup algorithm if the cost of locating destination t from source s is proportional to the cost of the minimal cost path between s and t. A location service has a locality aware publish algorithm if the cost of updating the location service due to a node moving from x to y is proportional to the distance between x and y. This paper presents a novel multicast routing protocol for mobile ad hoc wireless networks. The protocol, termed ODMRP (On-Demand Multicast Routing Protocol), is a mesh-based, rather than a conventional tree based, multicast scheme and uses a forwarding group concept. It applies on-demand procedures to dynamically build routes and maintain multicast group membership. ODMRP is well suited for ad hoc wireless networks with mobile hosts where bandwidth is limited, topology changes frequently, and power is constrained. We evaluate ODMRP's scalability and performance via simulation.

Index Terms **- Wireless Network, Multihop, Multicast, Ad hoc, Clustering, FGMP.**

1. INTRODUCTION AND BACKGROUND

In this paper we introduce a novel multicast scheme for a mobile, multihop wireless network with no fixed infrastructure [1, 2]. Various multicast schemes have been proposed for such an environment. One scheme creates a per-source multicast tree for each sender source [3]. Packets are multicast on the tree using Reverse Path Forwarding (RPF) for duplicate detection. We will show that RPF is not very effective in high mobility environments. Another is using a shared tree spanning the members in the multicast group [4, 5]. Data sent to the shared tree are forwarded to all receiver members. For the shared tree multicast, it is necessary to maintain a "core" or Rendezvous Point (RP) for sender and receiver paths to meet. RP mobility may affect multicast efficiency. Some schemes use sets of RPs [6] to direct multicast routing and resource reservation. The mobile RPs tend to increase the overhead of RP selection and thus reduce multicast efficiency.

In this paper we propose a multicast protocol which requires minimal infrastructure (without RP) and is thus resilient to mobility. Yet it achieves good efficiency by exploiting the inherent broadcast property of the wireless medium. In essence, the protocol is a hybrid between flooding and shortest tree multicast. In a static network it does converge to per source multicast. For this reason, we will compare its performance to that of flooding and DVMRP [3], the latter being a popular per source tree implementation.

Multicasting has emerged as one of the most focused areas in the field of networking. As the technology and popularity of the Internet have grown, applications that require multicasting (e.g., video conferencing) are becoming more widespread. Another interesting recent development has been the emergence of dynamically reconfigurable wireless ad hoc networks to interconnect mobile users for applications ranging from disaster recovery to distributed collaborative computing. Multicast plays a key role in ad hoc networks because of the notion of teams and the need to show data/images to hold conferences among them. Protocols used in static networks (e.g.,DVMRP [7], MOSPF [14], CBT [2], and PIM [8]), however, do not perform well in a dynamically changing ad hoc network environment. Multicast tree structures are fragile and must be readjusted continuously as connectivity changes. Furthermore, typical multicast trees usually require a global routing substructure such as link state or distance vector. The frequent exchange of routing vectors or link state tables, triggered by continuous topology changes, yields excessive channel and processing overhead. Limited bandwidth, constrained power, and mobility of network hosts make the multicast protocol design particularly challenging.

To overcome these limitations, we have developed the On-Demand Multicast Routing Protocol (ODMRP). ODMRP applies *on-demand* routing techniques to avoid channel overhead and improve scalability. It uses the concept of *forwarding group* [5], a set of nodes responsible for forwarding multicast data on shortest paths between any member pairs, to build a forwarding *mesh* for each multicast group. By maintaining.

This work was funded in part by the Defense Advanced Research Projects Agency (DARPA) under contract DAAB07-97-C-D321, as a part of the Global Mobile Information Systems (GloMo) program. and using a mesh instead of a tree, the drawbacks of multicast trees in mobile wireless networks (e.g., intermittent connectivity, traffic concentration, frequent tree reconfiguration, non-shortest path in a shared tree, etc.) are avoided. A *softstate* approach is taken in ODMRP to maintain multicast group members. No explicit control message is required to leave the group. We believe the reduction of channel/storage overhead and the relaxed connectivity make ODMRP more scalable for large networks and more stable for mobile wireless networks.

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Estimating Available Bandwidth using End-To-End Delay Increase Rate

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Abstract: ***For real-time services such as voice over internet protocol, video conferencing and peer-to-peer streaming, end-to-end bandwidth estimation is very essential. Several available techniques for estimating bandwidth have been suggested such as Magictrain, IGI / PTR, pathChirp, Yaz and ASSOLO. However, in terms of the accuracy of available bandwidth estimation and/or network load efficiency, these techniques have disadvantages. In this article, we present an available technique of estimating bandwidth consisting of two features to provide high accuracy estimation and low efficiency of network load. One feature is the accessible bandwidth assessment feature that uses the end-to-end delay increase rate to directly calculate the available bandwidth. The other feature is the rate adjustment algorithm which adjusts the mistake calculated using the available bandwidth assessment feature between the real accessible bandwidth and the accessible bandwidth. The suggested method's rate adjustment algorithm is based on Magictrain's because Magictrain offers high precision in estimating accessible bandwidth. Finally, in terms of estimation precision and network load efficiency, we compare the suggested technique with Magictrain using computer simulation and show the effectiveness of the suggested technique.***

Keywords: ***Available bandwidth, queuing delay, rate adjustment, probe rate model.***

I. INTRODUCTION

The fast development of broadband networks and improved efficiency of desktop personal computers (PCs) as well as tablet PCs in latest years has resulted to the widespread use of real-time facilities such as voice over internet protocol (VoIP) and video conferencing in addition to web and email services. Network carriers should know the efficiency of their networks and provide high communication quality to end-users in order to provide these services satisfactorily to end-users. The Internet, however, consists of distributed autonomous systems that manage different parts of the network as a whole.

In addition to providing network operators with helpful data on network features and efficiency, active bandwidth measurement instruments can also allow end users (and user apps) to conduct independent network audit, load balancing, and server selection tasks, among many others, without requiring access to network components or administrative resources. There are two primary phases recognized in these instruments: measurement and estimation. Measurement includes creating a pattern for a probe packet, transmitting it through the network, and receiving and measuring it.

According to some network model, estimation includes statistical and heuristic handling of measurements. What we call probe packet generation system is a significant element; it depends on both measurement and estimation phases. Isolating this feature as a element makes it possible to efficiently implement instruments for a set of measuring methods, as equipment for generating prevalent traffic patterns can be reused. The element of probe packet generation should provide generic facilities such as packet train generation, which can presently be found implemented in most packet train-based instruments as features or techniques.

Thus, knowing the general network's end-to-end network performance is a significant problem. Estimation techniques for end-to-end network performance were suggested to fix this issue. In addition, the writers outlined the significance of accessible peer-to-peer (P2P) or video streaming services bandwidth assessment in[1]. Therefore, in this research, we concentrate on accessible estimation of bandwidth. Available techniques for estimating bandwidth have been suggested such as Path load[4], IGI / PTR[3], pathChirp[2], Yaz[5], and ASSOLO[6]. In order to estimate accessible bandwidth, these techniques require introducing probe traffic into the network.

In order to estimate accessible bandwidth, these techniques require introducing probe traffic into the network. Pathload and IGI / PTR boost network load as these techniques use a heuristic search procedure to assess the accessible bandwidth based on the highest original sending frequency. PathChirp, on the other hand, does not boost the network load as it estimates the accessible bandwidth based on the original minimum transmitting speed.

In this article, we present a technique of estimating bandwidth available to provide high accuracy estimation and low efficiency of network load. The technique suggested consists of two features. One feature is the available bandwidth assessment feature that uses the end-to-end delay increase rate to directly calculate the available bandwidth. Hereafter, the available bandwidth was calculated as the main accessible bandwidth by the available bandwidth assessment feature. The other feature is the algorithm for rate adjustment, which decreases the network load needed to estimate the accessible bandwidth. The algorithm for rate adjustment adjusts the error between the real bandwidth available and the main bandwidth available.

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GLOBAL AGGREGATION NETWORK NODES FOR CREATION OF TRANSIENT NETWORKS

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Abstract : The stationary nature of nodes in a mesh network has shifted the main design goal of routing protocols from maintaining connectivity between source and destination nodes to finding high-throughput paths between them. In recent years, numerous link-quality-based routing metrics have been proposed for choosing high-throughput paths for unicast protocols. In this paper we study routing metrics for high-throughput tree or mesh construction in multicast protocols.

We show that there is a fundamental difference between unicast and multicast routing in how data packets are transmitted at the link layer, and accordingly there is a difference in how the routing metrics for each of these primitives are designed. We adapt certain routing metrics for unicast for high-throughput multicast routing and propose news ones not previously used for high-throughput.

We present simulations that show that using MTM yields an average total network throughput increase of 20% to 60%, depending on network density. In addition, by combining the MTM with a medium time fair MAC protocol, average total network throughput increases of 100% to 200% are obtained over traditional route selection and packet fairness techniques.

IndexTerms **– Wireless Networks, HiperLAN, Network Nodes**

1. INTRODUCTION

Ad hoc wireless networks are self-organizing multi-hop wireless networks where all nodes take part in the process of forwarding packets. One of the current trends in wireless communication is to enable devices to operate using many different transmission rates. Many current and proposed wireless networking standards have this multi-rate capability. These include the 802.11b [1], 802.11a [2], 802.11g draft, and HiperLAN2 [3] standards. The reason for this multi-rate capability stems directly from some of the fundamental properties of wireless communication. Due to the physical properties of communication channels, there is a direct relationship between the rate of communication and the quality of the channel required to support that communication reliably. Since distance is one of the primary factors that determines wireless channel quality, there is an inherent trade-o® between high transmission rate and effective transmission range.

This range speed trade-off is what has driven the addition of multi-rate capability to wireless devices. Consumer demands for wireless devices always include both higher speed and longer range. Unfortunately, a single rate represents a single trade-o® point between these two confecting goals. Since multi-rate devices support several rates, they provide a wide variety of trade-offs available for use.

This gives them a great deal of Flexibility to meet the demands of consumers. This added flexibility is the primary driving force behind the adoption of multirate capability. It is also reasonable to assume that this type of capability will also be present in future wireless networking standards. While multi-rate devices provide increased flexibility, they cannot change the inherent trade-o® between speed and range. Both high speed and long range cannot be achieved simultaneously. Long range communication still must occur at low rates, and high-rate communication must occur at short range. This multirate capability merely provides a number of different trade-off points. Multi-rate devices must have protocols that select the appropriate rate for a given situation.

In infrastructure-based networks, all communication takes place between nodes and access points. In this case, an additional protocol required to sup-port multi-rate is necessary only at the medium access control (MAC) layer. In these networks, the routing protocol must select from the set of available links to form a path between the source and the destination. Short links can operate at high rates, but more hops are required to reach the destination. In addition, the path selected by the routing protocol will not only affect the packets moving along that path, but will affect the level of congestion at every node within the interference range of the path as well. Our Contribution. We provide a general theoretical model of the attainable throughput in multi-rate ad hoc wireless networks. This model is derived from the properties of the physical and medium access control layers. The traditional technique used by most existing ad hoc routing protocols is to select minimum hop paths. These paths tend to contain long range links that have low effective throughput and reduced reliability. We present the *Medium Time Metric* (MTM) that selects higher throughput paths and tends to avoid long unreliable links.

The MTM minimizes the total medium time consumed sending packets from a source to a destination. This results in an increase in total network throughput.

2. RELATED WORK

Ad Hoc Routing Protocols: A large number of routing protocols have been proposed by the ad hoc wireless networking community. Typically, these have adopted one of two major strategies: on-demand such as in AODV [4] and DSR and proactive such as in DSDV [6] and OLSR [7]. The vast majority of these protocols where originally designed for single-rate networks, and thus have used a shortest path algorithm with a hop count metric (min hop) to select paths.

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H - Cluster Thermal Infrared Imaging by Attainable Bi-Portioning

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Abstract: ***Breast cancer is that the commonest cancer in girls, and therefore the risk will increase with age Health authorities and doctors suggest regular screening with diagnostic procedure for girls, counting on their age and individual risk factors. That won't have the power to observe thermal signs that will counsel a pre-cancerous state of the breast, or signs of cancer at an awfully early stage, lies in its distinctive capability of watching the temperature variation made by the earliest changes in tissue physiology(function).***
Thermography, conjointly called thermal imaging, uses a special camera to supply pictures, called Thermograms, showing patterns of warmth and blood flow close to or on the surface of the body. This paper presents diagnostic technique through which Breast willcer screening an determine carcinoma before someone notices any physical symptoms. Early detection will change someone to bear less invasive treatments with higher outcomes. Presenting system is employed to observe tube-shaped structure changes in breast tissue that will indicate the presence of a few years before different ways of screening can. It can even observe changes in breasts with dense tissue and implants.

Keywords: Internet of Things (IoT), Infrared radiation, mammography, Thermography

1. Introduction

The human body naturally manages the creation, growth, and death of the cells in its tissues [1]. Once this method starts to figure abnormally, and therefore the cells don't seem to be dying at the speed they must, we have a tendency to see a rise within the quantitative relation of cell growth to death, that could be a direct explanation for cancer [2]. Carcinoma happens once cells within the breast divide and grow while not affordable management. it's a widely known illness round the world. Over the past twenty years many techniques are projected for this purpose, like diagnostic procedure, that is often used for carcinoma designation. However, false positives of diagnostic procedure will occur during which the patient is diagnosed positive by another technique [1].

An X-ray photograph could be a quite X-ray. It involves pressing the breast between 2 metal plates Associate in Nursing taking an X-ray image of the breast tissue. However, it has some disadvantages; Mammography can go together with some risks. However, the recommendations on once and the way usually someone ought to bear screening take these risks into thought. Regular testing suggests that perennial exposure to low levels of radiation, which can increase the danger of cancer slightly. Mammography can conjointly reveal noncancerous changes, resulting in false-positive results. As a result of dense breast tissue can seem white on the diagnostic procedure image, which might mask the presence of tumors, as these conjointly seem as white. Density adipose tissue, on the opposite hand, seems gray on the image, creating it easier to check any changes [3].

Diagnostic technique uses a kind of infrared technology that detects and records temperature changes on the surface of the skin. It will facilitate screen for carcinoma. A thermal infrared camera takes an image of the areas of various temperature within the breasts. The camera displays these patterns as a kind of warmth map. Once a cancerous growth develops, there could also be excessive formation of blood vessels and inflammation in the breast tissue. These show au fait the infrared image as areas with a better skin temperature.

The use of Binary Infrared Imaging relies on the principle that metabolic activity and tube-shaped structure circulation in each pre-cancerous tissue and there-fore the space close a developing carcinoma is nearly perpetually above in traditional breast tissue. Binary Infrared Imaging uses ultra-sensitive medical infrared cameras and complex computers to observe, analyze, and turn out high-resolution pictures of those temperature variations. Thanks to Binary Infrared Imaging extreme sensitivity, these temperature variations could also be among the earliest signs of carcinoma Associate in Nursing/or a pre-cancerous state of the breast Studies show that an abnormal infrared image is that the single most significant marker of high risk for developing carcinoma, ten times a lot of important than a case history of the illness. Consequently, in patients with a persistent abnormal thermo gram, the examination results become a marker of upper future cancer risk. relying upon sure factors, re-examinations square measure performed at applicable intervals to watch the breasts [4]. This gives a girl time to require a pro-active approach by operating together with her doctor to boost her breast health. By maintaining shut watching of her breast health with infrared imaging, self-breast exams, clinical examinations, diagnostic procedure, and different tests, a girl features a far better likelihood of police investigation cancer at its earliest stage and preventing invasive neoplasm growth [5].

2. Technology, Interpretation imaging:

Hierarchical clustering-based segmentation (HCS) provides a generic answer to the advanced interpretation of thermal

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IoT Based Smart Farming: Applications, Technologies and Future Vision

N Penchalaiah, Jaladanki Nelson Emmanuel, S Suraj Kamal, C V Lakshmi Narayana

Abstract*: *Agriculture is our main economic occupation for ages. But agriculture is primarily limited by the migration of people from rural to urban. To solve this problem, we will use IoT to develop smart agriculture techniques. The Internet of Things (IoT) technological developments has created a revolution in every common field of life, intelligent and smart. IoT refers to a network of things that create their own network. The development of IoT-based Intelligent Smart Farming equipment turns the face of farm manufacturing every day not only into an improvement, it also makes it cost-efficient and reduces waste. The primary objective of the project is to make agriculture intelligent through automation and IoT.

Keywords*: *IoT, Smart Agriculture, Agriculture framework

I. INTRODUCTION

Together, the supply of industrial agriculture as well as global civilization enhanced agriculture to provide the people of the world. The agricultural domain employs new techniques and solutions [1] to provide the best solution for data collection and processing [2] while at the same time boosting aggregate profitability. Simultaneously, the unprecedented temperature change and severe soil crisis [3] demands new and improved modern industrial and agricultural technologies. To achieve this mission, automation and intelligent decision are becoming extremely essential [4]. The internet of things is becoming increasingly common in this regard [5], and all-embracing computing, mobile ad hoc sensors and networks [6], radio frequency ids [7].

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II. MOTIVATION

This paper has been influenced by various motivational factors, as noted below:

− The region of agriculture in the implementation of the IoT to improve traditional farming techniques has mostly been explored [8]. The fast development of nanotechnology in the last century has made it possible to generate tiny and inexpensive detectors.

− IoT is an intrinsically and cost-effective tool for self-organization, decision-making, and automation in agriculture cum agriculture due to its nature, along with the modularized hardware platforms and scalable technologies. There are some key applications in this respect: high-precision agriculture [9], automated irrigation schedules [54], crop development optimization [10], agricultural property monitoring [12], greenhouse monitoring [13], and crop farming system management [14].

− These restrictions present difficulties in the development of agricultural IoT apps. Most IoT applications are targeted for different applications in agriculture. In the prediction of crop health and production quality, for example, IoTs for monitoring the environmental conditions with information of soil nutrients are applied over time. IoTs are anticipated to plan irrigation, tracking soil humidity and climate.

− As it is scalable, it is possible to improve the efficiency of a current IoT implementation to track more parameters by only including other device devices for the current design.

− The problems of these apps include interoperability for the computer, heterogeneity of innovation, safety, intervals estimation, and procedures for scheduling.

− In the general situation, IoT-based agriculture alternatives must be extremely cheap for end consumers to afford. However, the supply for food grain is growing exponentially with the growing population. The latest study advises that food grain manufacturing development is less than population growth [15]. This prompted scientists to require the use of sophisticated techniques to increase manufacturing. The Food and Agriculture Organization [16] recently released report states that by 2050 the requirements for food grain worldwide will reach 3 billion tones. In many agricultural applications, therefore, new and modern technologies have been taken into account to achieve the goal.

III. IOT AGRICULTURAL FRAMEWORK

This chapter offers a comprehensive structure for IoT solutions in complete (Fig. 3.1)

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Lung Cancer Segmentation in CT Images Using Fuzzy-C Means Clustering and Artificial Bee Colony Algorithm

J.Maruthi Nagendra Prasad, M.Vamsi Krishna

Abstract*: One of the challenging issues to most of the researches is to segment pulmonary nodules from the CT Lung images. This Research focus on rapid segmentation of pulmonary nodules from the CT Lung images based on Fuzzy-C Means Clustering and Artificial Bee Colony Algorithm. Classic 2D otsu algorithm is used for segmentation and Artificial Bee colony algorithm is used for finding optimum threshold values. Finally, FCM (Fuzzy-C Means) clustering is used over the CT segmented images to cluster the images.

***Index Terms*: CT Lung Images, Segmentation, ABC Algorithm, FCM Clustering.**

I. INTRODUCTION

In the human respiratory system lungs are considered as primary organs. There are two lungs, right and left lung and the lung tissues can be affected by various diseases, like lung cancer, pneumonia by exposing to dust, coal and adult respiratory distress syndrome. Pulmonary function tests can be used to identify any global changes happened in lung function. But they can't perform early detection of diseases and unable to separate the disease location [1, 2]. Early detection and assessment of pulmonary nodules is very important to enhance the life span of the victim.

CT imaging is the usual for lung imaging, which provides some of the advantages when compared to other imaging techniques like high resolution, brilliant contrast resolution, and using which 3D volume of the thorax can be collected completely [3].

In this study we proposed using artificial bee colony algorithm and FCM algorithm for segmenting lung CT images.

II. ABC ALGORITHM

In this algorithm[12] artificial bees are clustered into three groups employed, onlooker bees and the scout bees. In a honeybee colony half of the population consists of employed bees and rest includes onlooker bees. In the searching process, some of the bees perform random search for food in a specific area. Once food source is found these bees get back to the colony with nectar and leave nectar and intimate the location of the food source with rest of the bees.

Bee colony now enters into a new iteration cycle, following steps are involved in every iteration:

a) Employed bee will now become onlooker or continue to be employed bee.

b) Some of the onlookers in the colony will try to follow employed bees to further search for some specific memorized food sources.

c) Scout bees will do a random search based on the following probability for generating food sources from the memorized ones.

$$Pi=fi/\sum_{k=1}^{sn} Fk \quad -(1)$$

where f_i is the food source fitness value

Computational steps:

A) Prepare the Population.
B) Repeat the process
C) Employed bees must be Placed on the food source.
D) By relaying on the nectar values onlooker bees must be located on the food sources.
E) Scouts will be sent in search for the new food sources.
F) Best found food source locations must be remembered
G) Repeat the process until all the necessities are satisfied.

III. TWO-DIMENSIONAL OTSU METHOD

One dimensional Otsu method [9] was used for lung CT image segmenting, but it gave good results only for images with high contrast. This problem is addressed in Two-Dimensional Otsu method which gave good results with high or low contrast images.

The image is represented with function f(x,y) with size M*N, gray level local average and gray level of the pixel is used in the two dimensional thresholding technique, gray level local average can be represented with the function g(x,y)[4].

Joint probability mass function pij is given by

Pij=rij/M*N where I,j=0,1,2…L-1 (2)

Pij be the two Dimension histogram of the image.

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Machine Learning-based Project Resource Allocation Fitment Analysis System – (ML-PRAFS)

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Abstract: Many of the existing project automation tools can develop a project schedule with estimates of complete project summary time, budget, tracking possibilities, etc. still one of the significant gaps in the system is about estimating how a particular resource has the necessary competence, experience, and the track record of completing the tasks more effectively. Taking cue of the gap in the system, using the fundamental approach of game theory model, a contemporary resource fitment prediction using the machine learning model is proposed. The datasets that are trained using the SVM classifiers have provided an accuracy level of around 97% which signifies the efficacy of the model. For the future research scope, if the auto-fitment of scores for the metrics are developed, it might lead to more sustainable solutions with a minimal set of human intervention to the system.

Keywords: *project management, resource allocation, Machine learning model for resource allocation, ML-PRAFS.*

1 Introduction

1.1 Outlook

Project management as a system is very important in ensuring timely completion of the projects, effective resource utilization, minimizing the cost overruns and towards attaining operational excellence. In the current competitive environment, it is highly important that the organizations ensure quick turnaround time in the completion of projects, ensuring there is no lag in the project environment that might affect the desired outcome.[1]

With the emergence of ICT based project management solutions, there is a paradigm shift in the way organizations can focus on effective project management practices and leverage on the resource utilization to improve the project outcomes. However, one of the common issues that are imperative in the project management conditions could be attributed to high-cost overruns, a significant delay in the project trends, etc. But in addition to this, the other significant challenge in the case of project management is the effective utilization of resources. [2]

There are many automated project management tools and solutions that are available online, which will help the organizations and the project management teams, in developing a robust project schedule. Right from auto-scheduling the tasks, to reflect on the baseline, milestones, efforts, and budget there are multiple factors that are handled by the automated tools. But one of the key areas wherein the task-related conditions are assessed for a resource utilization is not integral to many of the contemporary systems.

There is a need for a more comprehensive system that can support the project teams in understanding the composition of the resource utilization and how such task performance-

Multivariate Features based Detection of Concept Drift (MFDCD) from Data Streams

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Abstract: Identifying concept drift in data sourced by data streams is crucial to stabilize the performance of the supervised and unsupervised learning strategies of the machine learning. Many contemporary contributions addressed about the formats of concept drift and impact of drift-detection accuracy on learning methods. The drift in the concept of streaming data has categorized as sudden, and gradual. The accuracy of the drift detection in streaming concept of contemporary models is suboptimal, which is often due to the poor sensitivity of the drift detection. In regard to this our earlier contributions endeavored to portray novel drift detection models for supervised data (each record of values in a sequence of attributes) of the data streams. This manuscript defined a novel strategy to detect the abrupt (sudden), and incremental (gradual) of the unsupervised data sourced by data streams. The proposed method has titled as "Multivariate Features based Detection of Concept Drift (MFDCD) from Data Streams" that referred further as MFDCD. The experimental study carried on the proposed model and other two contemporary models. The performance analysis of these three methods has carried by the outcomes attained for performance assessment metrics that denoting the performance significance of the proposed model MFDCD is outperforming the contemporary models.
Keywords: concept-drift, Gaussian mixture models (GMM), early drift detection method (EDDM), piecewise affine (PWA), analytic hierarchy process (AHP)

1 Introduction

Generating the volume of data automatically is enhancing constantly in today's world. The data which is generated digitally are in the form of streams that might represent 3 important intricacies (a) they were boundless in the size (b) they come with maximum steady rate (c) they might develop the over-time.

The conventional computing methods have addressed successfully regarding the speed & size problems through delivering fast & approximate solutions. On the other hand, the contemporary updates in the computational intelligent methods have concentrated on addressing intricate issues associated to dynamic change in environment. In last decade, learning from the evolving data received abundant intention. Therefore, it addresses data unstable because of over-time that has called as concept-drift (CD). And in such circumstance, the outdated online algorithms for learning might not overcome this problem because they were not capable for discarding the traditional data. Unlike, evolving learning

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Optimal integrity Policy for Secure Storage of Encrypted Data using Cloud Computing

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Abstract*: Cloud computing is very common at reduced price because of its computing and storage ability. To reduce storage costs, an ever increasing number of information are being moved to the cloud. Then again, since the cloud isn't completely dependable, they are usually encrypted before uploading to shield information protection from outsiders and even the cloud server. However, many activities on encrypted information, such as searching, are difficult to conduct. Searchable encryption has emerged to solve this issue. It is much less effective to search for encryption in multi-user environment than in single-user environment. As a foundation of attribute-based encryption to solve this issue a multi-user searchable system is suggested. Our system also keeps information safe in opposition to the cloud server in the cloud. It enables users with suitable permissions to conduct encrypted information search activities. Furthermore, customers generate search tokens instead of information holders. We demonstrate that in our system, token privacy and index privacy are all around ensured. No helpful data about search tokens and ciphertexts can be obtained from the cloud server and illegal users. Our scheme's ciphertexts are constant in size, reducing our scheme's time-complexity and bandwidth overhead.

Keywords*: Token privacy , Index privacy, Cloud Computing, Encryption and Decryption.

I. INTRODUCTION

Our today's society progressively relies on digital data collection, processing and sharing. Communication and networking are becoming more and more omnipresent and ad hoc thanks to the fast innovations in sensor, wireless and networking techniques. Driven by the explosive development of hardware and software capacities, computing energy becomes a government utility, and data is often stored on centralized servers to promote omnipresent access and sharing. The system's data is generally delicate and of elevated importance, while the system's confidentiality may be jeopardized by multiple safety breaches. Therefore, safety and privacy mechanisms need to be developed urgently in order to safeguard the authenticity, integrity and confidentiality of the data gathered and to regulate the disclosure of personal information. To accomplish this, there is a lack of centralized trusted parties in omnipresent networking; system users tend not to trust remote data servers when managing their data. They make it unsuitable for traditional networked information systems to create present security solutions. Users provide storage and company information to the cloud service provider. In addition, if their private information is revealed to their company rivals or public, the entrepreneurs will experience the critical implications. To mitigate safety problems in the cloud, many data security methods are created. Current approaches to data security concentrate only on data security in which random key generation procedures follow cryptographic solutions. But minimum data integrity is affected by the prevalent safety method. Key loss in standard cryptographic methods crashes the information owner's initial information. ABE is a public key encryption method that enables users to encrypt and decrypt emails based on user characteristics. For a specific user, the cipher texts are not encrypted in the ABE scheme. Rather, a set of characteristics or a policy over characteristics is connected with both the cipher texts and decryption keys. The user can only decrypt a cipher text when the decryption key matches correctly with the cipher text. ABE schemes are categorized as ABE (KP-ABE) based on key policy and ABE (CP-ABE) based on cipher text policy. The KP-ABE system is based on the user's attribute connection and decryption keys.

II. RELATED WORK

The Searchable Encryption technology tackles the search problem on the encoded files and enhances cloud storage and cloud computing practicability. It has greatly enhanced the usefulness as well as the accessible encryption adequacy. Multi-participant searchable encryption enabled the sharing of information among many individuals, where approved information users could search the files uploaded by information owners. Our work highlights multi-user model studies in searchable systems. The attribute-based encryption (ABE) systems attract the extensive focus of scientists in latest years with the growth of cryptography. It is an effective system for dealing with open access control situations issues. ABE was first launched by Sahai and Waters and allows access control over encrypted information using a number of generic characteristics linked to both the client secret key and the ciphertext [1]. ABE has two supplementary types: key-policy attribute-based encoding (KP-ABE) and attribute-based encoding (CP-ABE) ciphertext-policy. In CP-ABE, the ciphertext is associated with an access structure consisting of threshold gates between attributes; a user can decrypt a ciphertext if and only if the ciphertext access structure is satisfied by his / her attributes associated with his / her secret key, whereas the situation in KP-ABE is reversed.

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Phases of Developing Artificial Intelligence and Proposed Conversational Agent Architecture

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Abstract: ***AI has actually required the advancement of numerous improvements and also expansions. Amongst the most effective of these are the strategies of computational logic. This paper reviews the purpose for these anxieties, highlighting the certain attributes of Artificial Intelligence and also contrasting previous surges of automation and robotization with the existing improvements implemented through a wide-spread adoption of Artificial Intelligence.***

Index Terms : Artificial intelligence, inequality, technology

I. INTRODUCTION

Expert system was actually initial proposed through John McCarthy in 1956 in his initial scholarly meeting on the subject. The suggestion of devices working like humans began to become the facility of expert's mind and whether if it is actually feasible to make makers possess the same potential to presume and know on its own was actually presented by the math wizzard Alan Turing. Alan Turing was able to place his theories as well as questions in to actions through examining whether "makers can believe"? After set of screening (later was called as Turing Examination) it ends up that it is actually feasible to enable devices to assume as well as know just like humans. Turing Exam uses the practical strategy to be able to pinpoint if makers may answer as human beings.

Expert system is: the discipline that explain the capacity of artificial intelligence similar to people and the ability to reply to specific actions likewise called (A.I.). The need of Expert system is raising each day. Considering that AI was actually to begin with presented to the market place, it has been actually the cause of the fast improvement in innovation as well as service fields. Computer system expert are predicting that through 2020, "85% of consumer interactions will be managed without an individual". This indicates that people simple demand will depend on personal computers and artificial intelligence much like when our company make use of Siri or even Galaxy to inquire about the weather temp. It is actually very essential to be planned for Artificial Intelligence discovery just like UAE possess through putting up a state administrator for Artificial Intelligence in Dubai.

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AI supplies integrity, cost-effectiveness, deal with difficult complications, and decide; additionally, AI restrict information from getting shed. AI is actually administered nowadays in most fields whether company or even engineering. One of the terrific tools in AI is actually contacted "encouragement learning" which is based upon testing results and breakdown in real life to improve the reliability of applications. Regrettably, Artificial Intelligence is restricted with its ability and performance. Although Expert system created our lives much easier and conserved our team even more time than ever, researchers are actually forecasting that by the substantial dependency on AI humanity can vanished. Scientists suggest that by having a AI equipments, individuals will certainly be jobless and that are going to end in dropping the feeling of residing. Given that makers are finding out as well as performing things a lot more effectively and also properly in a timely fashion, this may be the factor of our termination.

According to the father of Artificial Intelligence John McCarthy, it is actually "The scientific research as well as design of making smart manufacturers, specifically smart pc programs".

Professional unit is actually a means of making a computer, a computer-controlled robotic, or even a system presume sensibly, in the identical manner the smart people presume.

AI is really completed by checking out specifically how specific human brain presumes, and additionally exactly how people discover, decide, as well as work while seeking to handle a problem, and after that making use of the results of the certain study as a manner of creating smart software application as well as devices. Todays Artificial Intelligence (robotics) possesses the capacities to imitate individual intelligence, performing various duties that call for thinking and learning, handle problems as well as create numerous choices. Artificial Intelligence program or perhaps plans that are actually put right in to robotics, computers, and even a variety of other identical units which each one of all of them important assuming capacity. Nonetheless, considerably of the existing Expert system gadgets (robotics) are still under discussion as they still need to possess extra analysis on their way of dealing with duties. Consequently Artificial Intelligence makers or devices must reside in placement to conduct the required jobs by without exercising inaccuracies. Furthermore, Robotics ought to remain in setting to do different tasks without any individual management or even support. Todays expert system like robot autos are actually very progressing along with quality capabilities like handling website traffic, minimizing their velocity, making from self-driving cars and trucks to the SIRI, the specialist system is rapidly improving.

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Reciprocal Repository for Decisive Data Access in Disruption Tolerant Networks

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Abstract*: Disruption tolerant systems (DTNs) comprise of cell phones that get in touch with one another deftly. Because of the low hub thickness and erratic hub versatility, just discontinuous system availability exists in DTNs, and the consequent trouble of keeping up start to finish correspondence connections makes it important to utilize "convey and-forward" strategies for information transmission. Instances of such systems incorporate gatherings of people moving in a debacle recuperation zones, military war zones, or urban detecting applications. In this paper we propose a a decisive strategy for stock the information at Network Central Locations (NCLs), with different hubs.

Keywords* : Disruption tolerant systems, Router, IP Address, Delay time, Network Central Locations.

I. INTRODUCTION

Disruption tolerant systems (DTNs) comprise of cell phones that get in touch with one another artfully. Because of the low hub thickness and capricious hub portability, just irregular system network exists in DTNs, and the consequent trouble of keeping up start to finish correspondence connections makes it important to utilize "convey and-forward" strategies for information transmission. Instances of such systems incorporate gatherings of people moving in calamity recuperation regions, military front lines, or urban detecting applications.

A lot of versatile hubs which are conveyed by people in vehicles will have Disruption Tolerant Networks (DTNs). The underneath figure show different utilizations of DTN's. The confinement in data transfer capacity and cushion size space is enormous defenceless against flood assaults in DTN'. The above figure shows different uses of DTN's. The confinement in data transfer capacity and cushion size space is enormous powerless against flood assaults in DTN's.

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A. Practical NCL Selection

The propose techniques for choosing the necessary K NCLs by and by dependent on the NCL determination metric proposed in the consider K as a predefined parameter dictated by the system execution prerequisites, which will be talked about later in more detail.

The worldwide system learning about the pair savvy hub contact rates and briefest entrepreneurial ways among portable hubs are accessible, focal hubs speaking to NCLs can be chosen successively by the system chairman before information get to.

B. Motivation

A requester questions the system for information get to, and the information source or storing hubs answer to the requester with information in the wake of having gotten the inquiry. The key contrast between storing systems in remote specially appointed systems and DTNs is delineated in Note that every hub has restricted space for reserving. Something else, information can be stored all over the place, and it is paltry to plan distinctive reserving methodologies.

The principle intention is configuration to new procedure added to improve the presentation and decreased effective information access delay. To propose one new approach is storing the essential thought is to purposefully reserve information at set of NCLs, which can be expeditiously gotten to by different hubs. The information source creates information; it drives information to focal hubs of NCLs, which are organized to store information. One duplicate of information is reserved at each NCL.

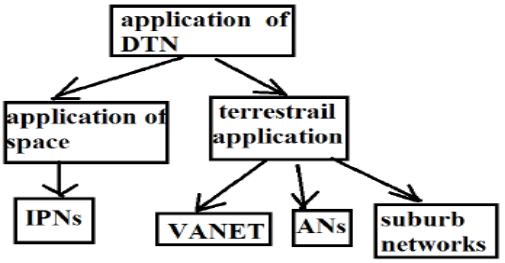

Fig.1: An Overview of Applications of DTN's

II. RELATED WORK

Balasubramanian[1], suggests that Numerous DTN steering conventions utilize an assortment of components, including finding the gathering probabilities among hubs, parcel replication, and system coding.

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Segmentation of Lung Ct Images using Cascaded Fully Convolutional Neural Networks

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Abstract: ***Interpretation of CT Lung images by the radiologist can be enhanced to a greater extent by automatic segmentation of nodules. The efficiency of this interpretation depends on the completeness and non-ambiguousness of the CT Lung images. Here, a fully automatic cascaded basis was proposed for CT Lung image segmentation. In this proposal a customized FCN was used feature extractions exploration from many visual scales and differentiate anatomy with a thick forecast map. Widespread experimental outcomes demonstrate that this technique can address the incompleteness in boundary and this technique can achieve best accuracy in segmentation of Lung CT Images when compared to other techniques which address the same area.***

Keyword: ***CT Lung image, Segmentation, Fully Convolutional Neural Networks, Cascading***

I. INTRODUCTION

Lung diseases are considered to be more deadly particularly lung cancer is considered more dreadful and causes more fatalities every year [1]. Lung cancer is considered to be one of the world's utmost frequent medicinal circumstances. Cancer in lung is by definition a malignance in lung tissues categorized by uncontainable growth of lung tissue.

Primary detection of pulmonary tumor nodules may lower the death rate and boost the life expectancy rate of the patient when therapy is more possible to be remedial. Computed Tomography imaging is an effective screening technique used to diagnose and detect pulmonary cancer. The doctor/radiologist uses the CT images obtained for the analysis and diagnosis of the tissues in the lung images. In many regular instances, however, it is problematic for the doctor/physician to derive at a correct detection without the assistance of an extra instrument known as the Computer Aided Diagnosis system.

CAD scheme is an effective instrument for diagnosis and a qualification for the practicality of today's medical imaging. To achieve a precise diagnosis, the doctor utilizes the CAD to offer an extra supporting view. CAD helps in Improving the efficacy of the therapy.

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CAD requires segmentation of the target organ precisely. It is a requirement for an effective measurable analysis of the Computed tomography lung images. Scheming an efficient technique for segmenting lung, however, is a challenge, particularly for malignant lung, where nodules need to be segmented with lung parenchyma. In addition, the parenchyma of the lung must be segregated from the areas of the bronchus.

For the programmed separation of the lung parenchyma region in Computed tomography Lung images, a huge amount of medical imaging methods are present in the market. Among them many are thresholding methods [2],[3] and are completely based on the contrast data provided in [4].

The detail that the lung areas have reduced densities associated to supplementary body parts make region of the lung to appear surrounded by a dark denser area (i.e. aorta and cavity of the body). These techniques are founded on a straightforward and efficient system for ordinary pulmonary segmentation of the image, then they fail significantly when we stretch the word "lung" to characterize not lone ordinary pulmonary tissue but also abnormal tissue [2].

Author in. [3] suggested a technique of gradual segmentation. First, to achieve an original segmented region, an iterative threshold is used. Second, an opening-closing morphological operator refines the area acquired. Another technique of segmentation [5] is to use wavelet transformation and an optimum threshold for first segmentation.

Here, we offer a pulmonary segmentation by means of the prevalent image segmentation technique called cascaded fully convolutional neural networks [6].

II. METHODOLOGY

Our suggested framework for casFCN is shown in Fig. 1. Through the output of thick border maps, the customized Fully Convolutional Neural networks are trained to acknowledge anatomy area of the lung from image which is provided as input. The boundary map produced then runs in below specified stages of Auto-Context.

At every level, the input is the summation of the predictive map of the CT lung image from the earlier level. The Level 0 border map is prepared as void. The map of forecast is slowly polished locally as it is revisited from level to level by the Auto-Context system. From the last Auto-Context level the last segmentation mask is attained.

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Self-Learning Based Emotion Recognition using Data Analytics

M M Venkata Chalapathi

Abstract: ***An outward appearance feeling acknowledgment based human-robot collaboration analytic framework used for which a layered framework structure is planned. This analytic framework empowers the robots not exclusively to perceive human feelings, yet additionally to create outward appearance for adjusting to human feelings. A facial feeling acknowledgment strategy dependent on multiclass extraordinary learning machine classifier is introduced, which is connected to ongoing outward appearance acknowledgment for robots. Here, a half and half component descriptor based technique is proposed perceive human feelings from facial articulations. Blend of spatial sack of highlights with spatial scale-invariant component change, and with spatial speeded up hearty change are used to enhance the capacity to perceive outward appearances. For arrangement of feelings, K-closest neighbor and bolster vector machines with direct, polynomial, and spiral premise work bits are connected. Descriptor produces a settled length include vector for all example pictures independent of their measure. Spatial SIFT and SURF highlights are free of scaling, turn, interpretation, projective changes, and mostly to brightening changes. An altered type of pack of highlights is utilized by including highlight's spatial data for facial feeling acknowledgment. The proposed strategy varies from ordinary techniques that are utilized for basic item categorization without utilizing spatial data. Tests have been performed on expanded muk–ken (MK+) and Japanese female outward appearance informational indexes. SVM brought about an acknowledgment precision of 98.5% on MK+ and 98.3% on informational index. Pictures are resized through specific pre-handling, in this way holding just the data of intrigue and decreasing calculation time.***

I. INTRODUCTION

The principle target of machine learning is to set up a utilitarian connection between info information and yield activities so as to acquire an auto-preparing ability for examples of information inputs. In view of whether the information is marked or not, machine learning can be commonly arranged into two gatherings: managed and unsupervised learning. In managed taking in, the objective is to build up a capacity from named preparing information (info and yield information), while unsupervised learning is to gather a capacity to portray the concealed structure from unlabeled information.

To make it simpler and increasingly common to cooperate with robots, individuals set forward new requests to human robot collaboration. It is trusted that robots can perceive human's outward appearances, comprehend feelings and give proper reaction.

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Enormous Data Analytics is contemplating vast datasets (huge information) to recognize concealed examples, showcase patterns, shopper inclinations and other significant data helping associations to shape key business choices. With Big information investigation, information researchers and different examination experts can look at enormous measures of organized information and in addition the undiscovered information by conveying examination.

II. TYPES OF FACIAL EXPRESSION:

Human facial Expressions are of basically six types, they are happiness, disgust, anger, sadness, surprise and fear. If we go in more detail the six types are not enough they are many. For example it is given below figure.

III. RELATED WORK

In late investigations, include based methodology is favored for the motivation behind feeling order fitting model for the shifting face shape and size is a testing assignment. The calculations that utilization worldwide facial highlights without division and consolidation of neighborhood spatial data are straightforward and quicker however the acknowledgment precision decline with an adjustment in the item present what's more, brightening. While, calculations that depend on nearby highlights are increasingly proper with the end goal of human feeling acknowledgment because of their power to brightening and posture varieties. It has been appeared neighborhood include descriptor for the chosen locales of intrigue perform well for picture handling applications, for example, object acknowledgment, picture coordinating, and object categorization. The principle focal point of late research has been on making these component descriptors increasingly hearty to protest changes.

Traditional and Object-Oriented Approaches in Software Engineering Development

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Abstract— Here in this paper we explore comparative study to analyze the performance differences between Traditional software development models and Object-Oriented approach. Traditional approaches like waterfall, spiral lack flexibility to deal with object oriented models. The approach of using object – oriented techniques for designing a system is referred to as object oriented design. Object oriented development approaches are best suited to projects that will imply systems using emerging object technologies to construct, manage, and assemble those objects into useful computer applications. Object oriented design is the continuation of object- oriented analysis, continuing to center the development focus on object modeling techniques.

Keywords-Software Engineering, Traditional Approach, Object-Oriented Approach, Analysis, Design, deployment.

I. Introduction:

All software, especially large pieces of software produced by many people, should be produced using some kind of methodology. Even small pieces of software developed by one person can be improved by keeping a methodology in mind. A methodology is a systematic way of doing things. It is a repeatable process that we can follow from the earliest stages of software development through to the maintenance of an installed system. As well as the process, a methodology should specify what we're expected to produce as we follow the process. A methodology will also include recommendation or techniques for resource management, planning, scheduling and other management tasks. Good, widely available methodologies are essential for a mature software industry.

A good methodology addresses the following issues: Planning, Scheduling, Resourcing, Workflows, Activities, Roles, Artifacts, Education. There are a number of phases common to every development, regardless of methodology, starting with requirements capture and ending with maintenance. During the last few decades a number of software development models have been proposed and discussed within the Software Engineering community.

A Novel Method for the Identification of Phishing Web sites and Secure Transactions

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***Abstract*— Phishing is a fraudulent enterprise using methods related to social engineering. Phishers attempt to obtain confidential information fraudulently, such as passwords and credit card numbers, by masquerading an electronic message as a trusted individual or company. The phisher must convince the victim to intentionally carry out a series of acts which will provide access to sensitive information. Communication channels are common, such as email, webpages, IRC and instant messaging services. The strong techniques are important for stopping phishing attacks. In our research, we proposed a protection against phishing using Visual Secret Sharing Scheme (VSS) in Visual Cryptography (VC) to the the phishers-triggered attacks. Visual Cryptography (VC) is a process by which a secret image is encrypted into shares, so stacking a sufficient number of shares exposes the secret image. Users can conduct online transactions in a safe and secure manner by implementing the above-mentioned techniques.**

***Keywords*— Include at least 5 keywords or phrases**

I. INTRODUCTION

The number of people who use online banking increases rapidly in the past few years. The increase of novice users, however, invites the increase of criminal acts which are now known as phishing attacks. A phishing attack is one of the fastest growing kinds of attacks on the internet in recent years. Phishing attacks typically involve sending fraudulent e-mails or fake website to individuals in order to solicit sensitive and confidential personal information, such as account numbers, social security number, and passwords from the recipients.

The word Phishing comes from fishing. It is obvious that the usual way of phishing can be considered as the procedure of fishing[1]. To some degree, internet is filament and the phishing attacks play the role of fish bait. Phishing attacks usually have the following features:

i. It seems like a usual "food". It is not easy to find that it is a fake. It looks like normal things which you contact every day. Phishing attacks solicit sensitive information by setting up a fake website or sending a fake e-mail. And, both a fake website and a fake e-mail appear to come from a legitimate company such as a bank, retailer or other e-commerce business.

ii. It smells "good", and the recipients always feel nothing wrong with the normal "food". Phishing attacks typically use a false "from" address, web links, copies of company logos, and figures to make the fake websites and e-mails look like coming from the legitimate companies with which the recipients of the e-mails have business dealings, thus getting the recipients‟ trust by fraud. Then the attackers snatch the sensitive information step by step. Figure 1 illustrates that the e-commerce has an around 3.6 times increase from 2014 to 2021.

Phishing attacks have been reported in the global world, which seriously impact the security of online financial services and the development of electronic commerce. This kind of public risk already influences people's confidence in using internet. To go a step further, phishing attacks will be a big society criminal problem to prohibit from economic advancement. The main target of phishing attacks is novice users who do not have enough knowledge to understand complicate operations of computer, who do not want to install special hardware or software, and who do not want to pay lots of money to prevent phishing attacks[2]. There is no explicit survey data to back up this obvious conjecture, but Figure 2, is noteworthy.

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Performance of Ad hoc On-Demand Distance Vector Routing

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Abstract

Growing highly efficient routing protocols for Ad hoc Network is a demanding mission. In this paper, the proposed technique for signal strength based link availability prediction to be used in routing. In order to full multiple routing necessities, such as low packet delay, delivery rate of high packet, and effective adjustment to network topology changes with low control overhead etc,. The estimate of the nodes breakage of the link time and additional notifies the other nodes about the link breaks in the route. Therefore, either local route repair or new route discovery is initiated much earlier than the route breakage. It reduces the data packet losses as well as continuous delay. The proposed method is contrasted with and without link prophecy. The outcome demonstrates that here is considerable reduction in packet drops and average end-to-end delay and also an improvement in data packet delivery ratio with link prediction. Proposed approach results are in progress in the Service excellence.

INTRODUCTION

Ad-hoc network consists of mobile stand which are free to communicate without any infrastructure and central control unit [1].This can operate in an isolated manner or with fixed networks through gateways. The Ad hoc Networks is an independent system of nodes, which has numerous significant characteristics, namely, dynamic topologies, limited physical security, bandwidth and energy constrained operations [3]. Unlike from wired networks, Mobile Ad hoc Networks (MANETs) are infrastructure less networks which consist of wireless mobile devices. Since these mobile devices can join and leave the network freely, the network topology can change very frequently [6]. Due to the lack of infrastructure, devices in such networks need to cooperate with each other and work in a self-organized manner through wireless channels. Therefore, developing proper routing protocols for MANETs is a challenging task [4]. New routing protocols designed for MANETs are supposed to work in a self-organized manner and provide low packet delay, high packet delivery rate and effective adaptation [5].

PROPOSED METHOD

The Proposed Technique allows dynamic, self-starting, multi hoop routing between contributing mobile nodes craving to set up and sustain an ad hoc network. AODV allows mobile nodes to obtain routes quickly for new destinations, and does not require nodes to maintain routes to destinations that are not in active communication [14]. AODV allows mobile nodes to respond to link breakages and changes in network topology in a timely manner. The operation of AODV is loop-free, and by avoiding the Bellman-Ford "counting to infinity" problem offers quick convergence when the ad hoc network topology changes (typically, when a node moves in the network)[11]. When links break, AODV causes the affected set of nodes to be notified so that they are able to invalidate the routes using the lost link [10].

Every node seeks to preserve an efficient sight of its instantaneous neighbors at any time, in order to detect link failures rapidly, before they can lead to packet losses. The existence of a neighbour node can be confirmed when a message is received, or after any other successful interception or exchange of signals. The disappearance of a neighbour is implicit when such an event has not taken place for a certain amount of time or when a unicast transmission to this neighbour fails. The flow chart of link prediction algorithm as shown in Fig.1

RESULTS AND DISCUSSIONS

The proposed routing algorithm simulated with and without AODV link prediction to verify recital gain. The Random waypoint approach is used for the mobility of nodes representation and IEEE 802.11 is used for simulation. The estimation error is to reduce by the average pragmatic values have considered at same parameter.

The complete simulation parameters are outlined in the table 1.

Table 1. Parameters

Traffic pattern	Constant bit rate and TCP
Simulation duration	900 s
No of connections	20, 25, 30, 35, 40 and 45
Packet rate	4 packets/s
Mobility rate	5,10, 15, 20, 25, 30 m/s
Pause time	10 s
Surface Simulation	1500 m by 300 m
Total nodes	25, 50, 75, 100 and 125
Data packet size	512 bytes

Performance of the Dynamic Source Routing Protocol For Mobile Ad Hoc Networks (DSR) Using Random Way Point Mobility

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ABSTRACT

MANET is the mobile nodes collection that makes a network without any Permanent infrastructure. Every mobile node will operate as a congregation. Mobility is the prominent characteristic for the Ad-hoc networks. The performance of an ad-hoc network is evaluate by develop mobility models and that perfectly characterize the nodes movements. The objective of this work is to evaluating the various Mobility models by used to travelling patterns of the mobile node. This paper presents the analysis and compared the various routing protocols and obtained the results used in matlab/simulink.

Keywords: Mobile Adhoc Networks (MANETs)

1. INTRODUCTION

Traditionally, the utility of Mobile Adhoc Networks (MANETs) in strategic network connected applications to progress front line communications and the proposal of open standards (Bluetooth, IEEE 802.11, RFID) for wireless communication, have deep aid the operation of adhoc networks and maintain for more superior functions. Generally, a wireless network is a distributed network and the network is adhoc as every node is dedicated to forward data for other nodes. The nodes forward data determination is made dynamically. This is in contrast to wired networks in which routers perform the task of routing. It is also in contrast to managed (infrastructure) wireless networks, in which a special node known as an Access point manages communication among other nodes. In view of the fact that these mobile devices are joining and go away the network freely, the network topology can change very frequently. Owed to the required infrastructure, devices in such networks need to cooperate with each other and work in a self-organized manner through wireless channels. Therefore, developing proper routing protocols for MANETs is a challenging task. Despite the fact that, the proposed routing protocols focus on resolving fundamental routing requirements of MANETs' routing. In addition the basic routing requirements, new routing protocols designed for MANETs are supposed to work in a self-organized manner and offer low packet delay, high packet delivery rate and effectual adaptation.

Protected Information Recovery for Decentralized detection in Wireless Sensor Networks

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ABSTRACT:

Ciphertext-coverage attribute-founded security (CP-ABE) is a attractive cryptographic approach to the entry manipulate issues. Nonetheless, the situation of enforcing CP-ABE in decentralized DTNs supplies a number of security and alleviation difficulties with respect to the characteristic cancellation, key escrow, and synchronization of elements launched from unique regulators. We advocate two novel node replicated recognition approaches with special tradeoffs on process occasions and effectivity. The first one is depending on a allotted hash table (DHT), by which a absolutely decentralized, key-headquartered caching and verifying method is designed to capture duplicated nodes successfully. The method efficiency on mighty storage intake and high-quality safety level is hypothetically subtracted by means of a possibility design, and the causing equations, with essential enhancements for real utility, are bolstered by way of the units. Despite the fact that the DHT-founded system occurs upon identical interplay price as past strategies, it usually is regarded a little fine for some occasions. To handle this challenge, our 2nd allocated attention procedure, known as arbitrarily urged discovery, provides good interaction effectivity for heavy indicator programs, with the aid of a probabilistic recommended sending method along with unique preliminary route and boundary dedication.

***Keywords**: cipher text, DTN, DHT, efficiency*

1. INTRODUCTION:

Roy and Chuah offered storage nodes in DTNs the place information is stored or replicated such that most effective approved cellular nodes can access the vital know-how swiftly and efficiently. Many army functions require elevated safety of confidential data including entry control ways that are cryptographically enforced. In many circumstances, it is desirable to furnish differentiated entry services such that information access policies are defined over consumer attributes or roles, which are managed via the important thing authorities. For illustration, in a disruption-tolerant army network, a commander could store confidential expertise at a storage node, which should be accessed by means of individuals of “Battalion 1” who're collaborating in “vicinity 2.” on this case, it's a cheap assumption that a couple of

Resourceful Multipath Wireless Sensor Network Routing under Energy Conservation and Security as Context Factors

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Abstract
Aim of project is to develop a novel probability model to analyze best redundancy level In terms of path redundancy, source redundancy and best IDs. The contribution of project is to decide "how many paths to use and which path to use" in order to tolerate residual compromised node that survive our IDs to increase the life time of diverse wireless sensor networks. This is especially a critical issue in military or mission-critical WSN applications. Sensor nodes (SNs) close to the base station (BS) are more critical in gathering and routing sensing data. In the literature, various schemes have been designed for preserving critical SNs from energy exhaustion so as to prolong the system lifetime maximization; however, how to counter selective capture. We propose and analyze an adaptive network management algorithm with 3 countermeasures to counter selective capture: (1) optimal communication range and mode adjustment; (2) intra-clustering scheduling and inter-cluster multihop routing scheme; and (3) voting based intrusion detection. We develop a probability model to reveal the tradeoff between energy consumption vs. reliability and security gain with the goal to maximize the lifetime of a query-based WSN.

Keywords: heterogeneous wireless sensor networks, selective capture multipath Routing, lifetime maximization, intrusion detection, reliability, security, energy Conservation

1. Introduction

The problem of energy efficient reliable routing in wireless networks with unreliable communication links or devices or lossy wireless link layers by merging the power control schemes into the energy efficient routing is main goal of project. This work majorly focuses on the problem of energy-efficient reliable wireless communication in the presence of unreliable or loss wireless link layers in multi-hop wireless networks. Energy-Efficient and Reliable Routing (E2R2) is used for networks in which either hop-by-hop or end-to-end retransmissions ensure reliability. In wireless sensor networks, because of unreliable wireless media, host mobility and lack of infrastructure, providing secure communications is bit difficult in this type of network environment. In present work to ensure the security in unreliable wireless communication the cluster based topology technique is used, to obtain confidentiality and authentication of nodes hash function and MAC (Message Authentication Code) techniques are used. Many wireless sensor networks (WSNs) are deployed in neglected environment in which energy replenishment is difficult but not impossible. Due to

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Energy-efficient Scheduling of Cloud Data Center Servers

M.Rudra Kumar, Z.Prathiba Rani

Abstract*: Data center is a cost-effective infrastructure to store large data volumes and host large-scale service applications. Providers of cloud computing services are deploying data centers worldwide quickly. With lots of servers and switches. These data centers consume substantial quantities of energy, which contributes to high operating costs. Optimizing server and network energy consumption in information centers can therefore decrease operating costs. In a data center, power utilization is chiefly because of servers, network devices, and cooling systems, an effective energy-saving strategy is to consolidate computing and communication into fewer servers and network devices and then power off as many unneeded servers and network devices as possible. A new method of reducing the energy utilization of computer systems and networks in data centers while meeting the requirements of the cloud tenants for quality of service (QoS) is proposed here in this paper.

***Keywords*: Power Consumption, Server Power, Cloud Computing and Power Management.**

I. INTRODUCTION

Data Center provides cost-effective storage of data facilities and large-scale services hosting. There are hundreds of thousands of data centers that are interconnected by switches, routers and high-speed connections. Big businesses, like Facebook, Yahoo!, Amazon and Google, regularly use information centers in storage, web-search and computing on a big scale.

Cloud computing, which provides computer resources as a service, is a Revolution technology that provides cost-effective and pay-per-use flexible IT use, namely networks, storage, servers, services and apps, without physically obtaining them [1]. This sort of computing offers companies with many benefits, little time for start fresh services, reduced the state of being preserved and costs of operating, greater use all the way through virtualization, and easier revival of disasters that make cloud computing an appealing option [2]. This technological advancement has allowed the creation of a fresh computing model in which resources (e.g., CPU and storage) are supplied as general utilities that consumers can lease and distribute via the on-demand fashion of the Internet. Cloud computing that enables customers to access on-demand services. According to the client request, it offers pool of shared data, software, databases and other devices resources. Cloud computing services relate to software, platform, infrastructure, information, identity and management of policies [3].

The cloud service delivery model in the cloud setting includes three primary services such as Infrastructure (IaaS), Platform(PaaS) and Software (SaaS) as a Service. Basic layer infrastructure services such as storage, database management and computing capacities are available on demand in IaaS. This platform used PaaS to design, create, construct and test apps. While SaaS is extremely scalable internet-based apps that are offered as end-user services where end-users can purchase and maintain overhead software or services supplied by SaaS [4].

In order to operate effectively the cloud data center, virtualization is a main technology. Resource for data centers is often underused as the average load of their ability is around 30 percent. In the virtualized information centers, energy consumption may be reduced by deciding which physical server should be placed on a virtual machine (VM). Virtual consolidation strategies attempt to host a certain number of virtual computers on as few physical computers as possible. According to the Project Report of Open Compute, a data center uses more than 93 percent of its energy consumption efficiently to use computer resources.

In the following figure: 1 Many data processing services that are handled by virtual machines are software as a service to be considered as a workload.

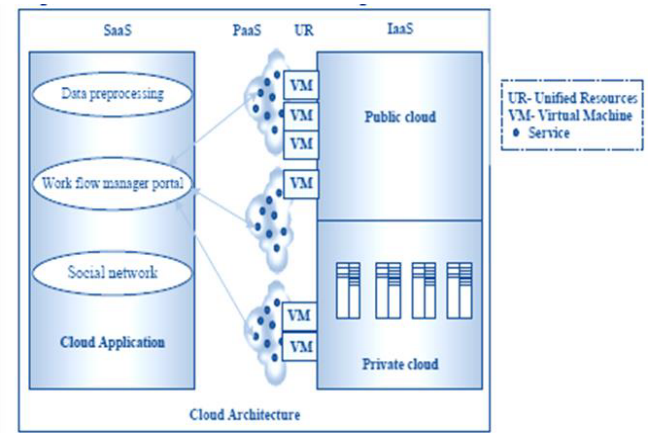

Fig 1: Cloud Architecture

Public cloud, personal cloud, community model and hybrid cloud are the four vital cloud organization models. Many computing service suppliers, including Yahoo, Microsoft, IBM and Google, are rapidly sending information centers to multiple places to deliver cloud computing services[5].

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Article

FBG based seismic vibration sensor with inverted spring-mass system

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Abstract

In this paper, we report the design of an FBG based seismic vibration sensor with an aid of an inverted spring-mass system to sense the primary waves of seismic vibration. A simple linear edge filter also designed using simple Single mode-Multimode-Single mode (SMS) configuration to interrogate the FBG. The obtained experimental results show that the proposed sensor is capable to measure the frequency of vibrations over the span of 2-20Hz. It is also evident that the designed sensor exhibits high sensitivity at 7.5Hz, which represents the resonance frequency of the sensor. The sensor parameters cane be alter by choosing the spring mass system parameters and the position of the FBG attached between the spring and the post.

STUDIES ON MECHANICAL PROPERTIES IN CONCRETE USING POLYPROPYLENE & G.I CRIMPED FIBRE

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Abstract : The concrete which has fibrous materials in it are called fibre reinforced concrete. The structural integrity increases. Fibres which are short discrete are distributed uniformly. The orientations of these fibres are random. There are many fibres such as synthetic fibres, natural fibres, steel fibres, glass fibres. The properties of these fibres vary within the concrete. It is seen that the characteristics of their fibre reinforced concrete changes with the change in concrete, its orientation and geometries. Crack occurs in the concrete due to plastic shrinkage. Fibres are added in concrete to avoid these cracking. It is wrong notation that fibres increase the strength of concrete. Sometimes opposite may happen. The permeability of the concrete is reduced and finally reducing the bleeding of the water. Steel fibres can improve the structural strength to reduce in the steel reinforcement requirement. Freeze thaw resistance of concrete is improved. Durability of the concrete is improved to reduce in the crack widths. Polypropylene fibres are used to improve the impact resistance. Many developments have been made in the fibre reinforced concrete. By replacing the fibres in concrete we are finding the compressive strength and split tensile strength of concrete.

Keywords **- Polypropylene Fibre, Galavanized Iron Crimped Fibre, Compressive strength, Split Tensile strength.**

I. INTRODUCTION

Fibres act like discrete reinforcement, which provide tensile stress transfer across a crack. Fibres bridging a crack increase the load carrying capacity of the material even after the formation of a crack. A concrete beam containing fibres suffers damage by gradual development of single or multiple cracks with increasing deflection, but retains some degree of structural integrity and post-crack resistance even under considerable deflection. A similar beam without fibres fails suddenly at a small deflection by separation into two pieces. The addition of the fibres to concrete therefore enhances the toughness of concrete. The ability of fibre-reinforced concrete composites to absorb energy has long been recognised as one of the most important benefits of the incorporation of fibres in plain concrete. The toughening effect is the result of crack closing stresses provided by the fibres results from several types of fibre/matrix interactions, leading to energy absorption in the fibre-bridging zone of a fibre-reinforced concrete (FRC). These processes include fibre bridging, fibre debonding, fibre pullout (sliding) and fibre rupture as a crack propagates across a fibre through the matrix.

There are many kinds of fibres, both metallic and polymeric, which have been used in concrete to improve specific engineering properties of the material. Steel fibres are used in a wide range of structural applications, in general, when the control of concrete cracking is important such as industrial pavements precast structural elements and tunnel linings. Steel fibres have high elastic modulus and stiffness and produce improvements in compressive strength and toughness of concrete. Improvements in flexural strength of the material are also obtained by the use of steel fibres in concrete. Increase in flexural strength is achieved with increasing fibre aspect ratio (length to diameter ratio) and fibre volume fraction; significant improvements are obtained at high volume fractions. In general, addition of steel fibres influences the compressive strain at ultimate load and ductility in flexure more significantly than the improvements in strength.

Steel fibres, however, increase structure weight of concrete and exhibit balling effect during mixing, which lowers the workability of the mix. In addition, steel fibres easily basset and rust, and it also has the problem of conductive electric and magnetic fields.

Synthetic fibres are less stiff than steel fibres and are most typically used in industrial pavements to reduce the cracking induced by shrinkage. Synthetic fibres are mainly effective in reducing crack formation, particularly at an early stage of the cast and in severe weather conditions (e.g. in dry climatic zones), when hygrometric shrinkage brings along some weak tensile stress which is yet too high for the fresh mixture to withstand. Synthetic fibres made using nylon Polypropylene and acrylic are available commercially. Polypropylene fibres are available in two different forms**;** Monofilaments and Fibrillated. Monofilament fibres are single strand of fibres having uniform cross-sectional. Fibrillated fibres are manufactured in the form of films or tapes that are slit in such a way that they have net like physical structure. Polypropylene fibres have good ductility, fineness, and dispersion so they can restrain the plastic cracks. Improvements are being made to optimize synthetic fibres to suit structural applications. Recently, macro-synthetic fibres have been produced with the aim of substituting steel fibres in structural applications. There has been a growing interest on synthetic fibres, owing to some substantial advantages over metallic ones, such as strong chemical stability in alkaline and generally aggressive environments, exemption from oxidation, lightness and, in turn, convenient stocking and handling, a-toxicity and electromagnetic transparency. This latter aspect is relevant, for instance, when either dealing with special equipment (ranging from mobile phones to CT diagnostics) or in industrial buildings wherein, say, automated toll collection booths employing electromagnetic vehicle detectors are planned. The availability of a structural synthetic fibre, capable of contributing to the load carrying capacity of an element while increasing its toughness and durability at a reasonable cost, is an important asset for an improved building technology. The knowledge of the fracture properties of concrete reinforced with these fibres is still limited.

Fibre volume content is the primary variable which influences the response of the fibre reinforced composite in tension. For small volume fraction, after first crack, there is drop in the load. There are a small number of fibres bridging the crack that sustain the load.

The capacity provided by the number of fibres crossing the crack is significantly less than the first crack load and load carrying capacity decreases rapidly with increasing deformation. For intermediate volume fraction, after the drop in load associated with the

Structural, Optical and Magnetic Properties of Pristine, (Mn, Al) co-doped ZnO Nanocrystallites Synthesized via co-Precipitation Method

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Abstract

Undoped and (Mn, Al) co-doped Zinc Oxide nanoparticles are synthesized by chemical co-precipitation method at room temperature effectively via poly ethylene glycol (PEG) as stabilizing agent. XRD data reveals that all the concentrations acquire hexagonal wurtzite crystal structure with no secondary peaks concerning to Al or Mn, indicating successful dissolution of Al and Mn in to ZnO host lattice. The exact particle size is estimated using TEM illustrations, which is confirmed through the XRD results. EDS spectrum shows, no impurities are present in the samples other than manganese and aluminum. The absorption spectra of all the samples reveal characteristic absorption edge in the vicinity of 375 nm. PL spectra show that all the concentrations include defect associated peaks in the visible region. VSM measurements reveal the ferromagnetic nature for co-doped samples. Copyright © VBRI Press.

Keywords: Magnetic studies, defect peaks, Secondary phase, absorption edge and VSM.

Introduction

In recent times dilute magnetic semiconductors (DMSs) had been enticing to an immense extent in view of the fact that they show their feasibility of influencing charge, spin degrees of freedom in a particular substance. By the accumulation of transition material into ZnO, room temperature ferromagnetism (RTFM) in ZnO associated DMS have brought about rigorous attention on ZnO. Due to high solubility of manganese and large band gap of ZnO host lattice, manganese doped ZnO reveals large potential. Furthermore, fascinated much attention for the reason that of disagreements concerning the existence and origin of RTFM [**1**]. Sharma *et al.* [**2**] identified nature of ferromagnetism beyond room temperature in support of small atomic percentages of manganese addition in ZnO bulk and thin films. They projected that RTFM nature appropriate to carrier-induced exchanges between isolated manganese ions in ZnO. But a few authors insisted that RTFM in manganese doped samples emanated from an oxygen vacancy stabilized meta stable phase [**3, 4**]. A few authors showed that the secondary phases of manganese clusters of transition elements and their oxides may be attributable for the identified ferromagnetic nature [**5-7**]. Nevertheless, a few recent analysis revealed that non-appearance of ferromagnetism ordering in bulk single phase of manganese doped Zinc Oxide downward to 2K [**8, 9**]. Similar conflicting consequences have also been identified for manganese doped Zinc Oxide thin films, it broaden from paramagnetic properties [**10**] to spin-glass nature [**11**]. Obviously the variations reported in the literature are owing to diverse synthesizing methods and with several explorations recommending that the magnetic properties are enormously receptive to the synthesized conditions. The aim of the present work is enhancement of luminescence and magnetic properties of the ZnO nanostructures via co-doping with dual impurities. We selected Al and Mn as appropriate dopants for the aim of present study, as Al doped ZnO is considered as a potential tool owing to its remarkable optical transmittance, high conductivity, luminescence, nontoxicity and manganese for its high soluble nature and ferromagnetic behavior at room temperature.

Investigational studies

Preparation of pure and co-doped ZnO nanostructures

Intended for the synthesis of Pristine and (Mn, Al) co-doped Zinc Oxide nanocrystallites, Zinc acetate dehydrate, Potassium hydroxide are used as preliminary materials and manganese acetate tetra hydrate, aluminum nitrate nano hydrate are used for the purpose of doping. All the chemicals are in analytical mark and used with no more purification. To prepare pure Zinc Oxide nanoparticles, Zinc acetate dihydrate solution is mixed with KOH solution with the help of magnetic

EFFECTS OF VISCOUS DISSIPATION AND CONSTANT HEAT SOURCE ON HYDROMAGNETIC FLOW OF CASSON FLUID OVER A DEFORMABLE POROUS LAYER

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ABSTRACT

The present study effects of viscous dissipation and constant heat source on hydromagnetic flow of Casson fluid over a deformable porous layer are examined. The lower and upper moving plates are maintained at constant different temperatures. The governing coupled nonlinear equations of the fluid velocity, solid displacement and the temperature are solved using Runge-Kutta fourth order method along with shooting technique. The effects of governing parameters on the fluid velocity, the solid displacement and the temperature are displayed graphically. The present study has been good agreement with existing results under some special cases.

Keywords: Hydromagnetic flow; Casson parameter; deformable porous layer; shooting technique.

INTRODUCTION

The hydromagnetic flow of non-Newtonian fluid flows are used in engineering and industrial applications such as binary gas diffusion, ablation cooling, modelling of air and blood circulation in a respiratory system. Casson fluid is one of the non-Newtonian fluid. Human blood is one of the example of non-Newtonian fluid. Barry *et al.* [1] studied fluid flow over a thin deformable porous layer. Krishna Murthy [2] developed MHD Poiseuille flow of a Jeffrey fluid over a deformable layer. Free convection flow of a Jeffrey fluid through a vertical deformable porous stratum was studied by Sreenadh *et al.* [3]. Viscous fluid flow in an inclined channel with deformable porous medium was reported by Sreenadh *et al.* [4]. MHD Couette flow of a Jeffrey fluid over a deformable porous layer was investigated by Sreenadh *et al.* [5]. Rudraiah *et al.* [6] discussed Natural convection through vertical porous stratum. Flow of a radioactive Casson fluid

UV Protecting Behavior of Imidazole Based Zno Hybrid Thin Films for Sunscreen Applications

O. Akbar Basha, S. Mohammed Ghouse, I. Pugazhenthi, V. Vishnu Vardan

Abstract*: *UV radiations near visible region effects the human, and it causes many skin diseases. UV light not only effects human and also decolorize most of the textile fabrics. It degrades anticorrosive coatings and it triggers the corrosion over the metal surface. The protection of UV radiations has lot of attraction in the field of engineering research field to prepare sunscreen coatings. This work explains the preparation and characterization of Poly (N-vinyl imidazole)/ZnO by different techniques. The UV protective behaviors of prepared polymer composite thin films, make them as promising candidates for UV shielding and sunscreen applications.

Keywords*: *Polymer nanocomposite, Thin films, UV Protective Coating,

I. INTRODUCTION

The UV radiations reach from sunlight to earth is harmful for human skin. Due to decrease in the thickness of Ozone layer, these UV radiations causes very harmful skin diseases [1]. The UV light with wavelength below 300 nm has been filtered out by ozone layer but UV light in the range between 300 to 400 nm cannot be filtered out by ozone. Now a days researchers are involving to discover different UV absorbing materials. Nano materials with UV absorbing properties have been attracted, because of their photovoltaic nature which absorbs UV light effectively and these nanomaterials were incorporated into polymer matrix namely polymethyl methacrylate (PMMA) [2,3]. These polymer nanocomposites have been drawn in the form of thin films which does not allow UV radiations to enter due to effective absorption of UV light by nanomaterials [4]. Among different nanomaterials, ZnO is very cheap, eco-friendly and easy to prepare. ZnONps are wide band gap which makes it to compatible for UV absorption applications [5-7]. Here the synthesis of Poly(viniyl imidazole)/ZnO nano thin films have been reported for UV shielding purposes. We have characterized the crystalline, morphological, thermal properties and optical properties of both thin films with and without ZnONPs.

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II. MATERIALS AND METHODS

SYNTHESIS OF NVI

Poly(N-vinyl-2-imidazole) (PNVI) was prepared by free radical solution polymerization. 1g N-vinylimidazole (NVI) monomer was taken in toluene in which 60mg of AIBN radical initiator was added. Polymerization was conducted at 85°C for 3h. After cooling 50ml of Hexane was added to precipitate pure PNVI polymer powder which was vacuum dried at 40ºC [8].

III. PREPARATION OF NVP-ZNO COMPOSITE THIN FILMS

Exactly 1g of NVI is stirred into 30ml of Ethanol at Room temperature to get homogenous solution. 2.0wt% of ZnO NPs are added to the above solution with sodium dodecylsulphate (SDS) the solution is stirred in warm condition. The mixture was cooled and fabricated on glass substrates ($1cm^2$) by using spin coating method at 4500rpm. Then the coated substrate is dried at 60ºC. the composite thin films deposited on the glass surface has to be peeled out and kept in vacuum.

IV. CHARACTERIZATION TECHNIQUES

The crystalline and amorphous nature of synthesized materials were analyzed by Bruker D8 advance x-ray diffractometer, over the range of angular angle (2θ) in between 5–80º. The interaction of polymer and nanoparticles were analyzed FTIR spectra of SHIMADZU 8400 spectrophotometer. HITACHI S-4800 Type II spectrophotometer was used to study morphology of polymer thin films. UV blocking properties of prepared thin films have been analyzed by JASCO 670 spectrophotometer (DRS).

V. RESULTS AND DISCUSSION

XRD STUDIES

The XRD spectra of PNVI and PNVI-ZnO films have been showed in the Fig.1. The peak at $2\theta = 22.6$ corresponding to (1 0 1) plane is representing the amorphous nature of PNVI thin films. The presence of small crystalline peaks is the characteristic nature of ZnONPs, thus these Patterns suggests that the successive incorporation of ZnONps in the polymer matrix.

Dielectric and Optical Properties of Zirconium Titanate Thin Films by Reactive DC Magnetron Co-Sputtering

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ABSTRACT

Zirconium titanate thin films were deposited on alumina substrates by DC magnetron reactive co-sputtering by varying substrate temperature and the effects of substrate temperature on optical and dielectric properties of the films have been studied intensively by available characterization techniques. The optical parameters were determined by Swanepoel's method. The films exhibited high transmittance in the visible region and the optical band gap of the films varied from 3.1 to 2.8 eV as the temperature varied from 33 to 400^{o}C. The film deposited at room temperature exhibit a high transmittance of 71%. Dielectric constant measurements have been carried out at 10 GHz of frequency. The dielectric constant increased with increase in temperature and the film deposited at 400^{o}C exhibited a high dielectric constant (40) and a low dielectric loss (0.026).

Index Terms — **zirconium titanate thin films, DC magnetron reactive co-sputtering, 19 alumina substrate and substrate temperature**

1 INTRODUCTION

HIGH-K dielectric materials find applications in dielectric resonators, filters, gate dielectrics, phase shifters, voltage tunable oscillators and dynamic random access memories [1]. Owing to their high dielectric constant, high quality factor, high temperature stability besides good optical properties Zirconium titanate (ZTO) and ZTO based materials act as potential candidates for microwave dielectrics [2-4] and also find applications in mid-infrared integrated photonics as well [5]. There are reports on the effects of processing parameters like substrate temperature [6], annealing temperature [7, 8] and partial pressure ratios of sputtering and reactive gases [4] on the dielectric properties of ZTO films. Some of the authors described correlation of processing parameters and film properties. Kim *et al* reported the effects of thickness on dielectric behavior of ZTO thin films fabricated by sol-gel process [9]. Kim *et al* demonstrated effects of microstructures on microwave dielectric properties of ZTO thin films [10]. Victor *et al* reported the significance of amorphous ZTO thin films and the dielectric relaxation phenomenon in these films [11]. Kim *et al* correlated strain and dielectric properties of ZTO thin films [1]. Kim *et al* described effects of substrate temperature on physical and dielectric properties of ZTO thin films in the MHz to GHz range by measuring dielectric constant in the range of 2 to 6 GHz [6, 10].

During nucleation, the smaller crystallites move randomly on the surface of the substrate and combined with adjacent crystallites to grow in to larger crystallites resulting crystallanity of the film, hence all the films remained in amorphous state because of the surface roughness of the substrate where as ZTO films deposited on glass substrate

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Hall Effects on Unsteady Magneto Hydrodynamic Convection Flow of Nanofluids Past a Rotating Porous Plate

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Abstract: ***The effects of Hall current are considered for the convective rotational current free of nanofluid magnetohydrodynamics (copper and alumina) in a permeable medium with a vertical porous flat plate, semi-infinite rotation with stable state of the heat source and convection limit. The slip rate is expected to oscillate over time with a constant frequency so that the boundary layer solutions are of the equivalent oscillating type. The equations to regulate the flow are analytically solved by perturbation estimation. The effects of different parameters on the flow are investigated by means of diagrams and tables.***

Keywords: Porous medium; Nanofluids; Convective flow; rotating frame; Heat transfer.

NOMENCLATURE

u, v, w velocity components along x, y and z-axis respectively.
β_{nf} coefficient of the thermal expansion.
K_{nf} Thermal conductivity.
U_r The uniform reference velocity.
ε The small constant quantity.
σ Electric conductivity.
ρ_{nf} Density.
μ_{nf} viscosity.
$(\rho C_p)_{nf}$ heat capacitance.
g acceleration due to gravity.
k permeability of porous medium.
T Temperature.
Q Temperature dependent volumetric rate of heat source.
α_{nf} Thermal diffusivity.
$(\rho\beta)_{nf}$ The thermal expansion coefficient of the nanofluid
ϕ Solid volume fraction of the nanoparticles.
w_0 The normal velocity at the plate.
ν_f Kinematic viscosity.
R rotational parameter.
M magnetic field parameter.
Pr Prandtl number.
S Suction (S>0) or injection (S< 0) parameter.
K Permeability of the porous medium and
Q_H Heat source parameter
B_0 Magnetic induction
k Permeability of porous medium
Ω Angular velocity
σ Electrical conductivity of the fluid
γ Convective parameter
Re_x Local Reynolds number
τ Skin friction parameter
Nu Nusselt number
n Frequency of oscillation
t Time

Subscripts:
f Base fluid
nf Nano-fluid
s Nanosolid paricles

I. INTRODUCTION

There is very significant interest in science and technology for convective Nano fluid heat transfer. Ethylene glycol, Water, and engine oil are heating or cooling agents and play a decisive role in many industries ' thermal management with low thermal conductivity. We enhance thermal conductivity for extended surfaces, mini-channels and micro-channels. Concrete materials have higher thermal conductivities.

The word nanofluid has been presented first by Choi [3]. Nano-particles are a viaduct between enormity materials and nuclear or molecular sytheses. Some of nano-particles have utilized are Al, Cu, Fe and Ti or their oxides. Progressed nuclear system [1] has great application utilizing of nanofluids. Micro-channel miniaturization and cooling of the system, heat transfer system size decrease, improved heat transfer and negligible clogging are the advantages of nanofluids. Conge do et al. [5], Das, Kalidas [11] and Ghasemi discussed on regular convection heat transfer in nanofluids. The 2-dimensional regular convection flow of a nanofluid in a walled in area has been discuused by Khanafer et al. [4]. MHD Non-Newtonian fluid rotating streams have various uses in turbo equipment, geophysics, meteorology, and a few areas. Das, Kalidas[11], Bakr6] and Das[9] investigated micropolar fluid free convection flow in a pivoting stream.

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Investigations on physical properties of Mg ferrite nanoparticles for microwave applications

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Enhancing Communication Skills of Professional students

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Abstract:

Communication is a process of sharing information through speech, writing, gestures or symbols between two or more people. The focus of the present paper is oral communication and the language under consideration is English. The teacher should adopt a student cantered approach. The learners should be encouraged to do things in the class which result in developing their communication skills. The trainer has to focus on both the linguistic and paralinguistic features of the communication process while enhancing learners' communication skills. These features involve effective use of words, forming grammatically intelligible sentences and an appropriate use of voice and intonation. The teacher should encourage and train his students to use positive body language while listening and speaking. In order to hone the communication skills of the learners, it is very important to make the learners comfortable with the language they have to communicate in. Shedding their inhibitions is also one of the pivotal areas of concerns. This paper explores different techniques that could be useful while training students in communication skill.

Keywords: Honing, Communication Skills, Paralinguistic features

Introduction:

HONING COMMUNICATION SKILLS OF STUDENTS

Communication is a process of sharing information through speech, writing, gestures or symbols between two or more people. The focus of the present paper is oral communication and the language under consideration is English. The major elements of a communication process are sender, receiver, message and feedback.

Effective communication is a two way process. It involves both expressive (speaking) skills and receptive (listening) skills. It entails receiver's understanding of the message sent by the sender and his feedback to the sender. Listening plays a very important role in the language learning process. It is the most primary of the four basic skills of any language i.e. Listening, Speaking, Reading and Writing. Listening paves way for speaking. One can never be a good speaker if one is not a good listener. An effective communicator is first a good listener and then a good speaker. According to Tickoo (2003),

THERMAL RADIATION AND CHEMICAL REACTION EFFECTS ON MHD MIXED CONVECTION FLOW OF A MICROPOLAR FLUID PAST A CONTINUOUS SURFACE IN A PARALLEL MOVING STEAM WITH VISCOUS DISSIPATION

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Abstract: In this paper, the effects of thermal radiation and chemical reaction MHD mixed convection flow of a micropolar fluid past a continuously moving flat plate placed in a parallel moving stream with viscous dissipation has been investigated. The Rosseland approximation has been used to describe the radiative heat flux in energy equation. The governing systems of partial severalial equations are converted to ordinary severalial equations by using the similarity transformations, which are then solved numerically by using fourth order Runge–Kutta scheme together with shooting method. The Velocity, micro-rotation, temperature and concentration prifiles have been obtained for several parameters, namely the Grashof numbers *Gr* & *Gc*, Magnetic field parameter *M*, the Prandtl number *Pr*, the radiation parameter *R*, the Eckert number *Ec*, the Schmidt number *Sc* and the chemical reaction parameter *Kr*. Discussion has been given for both the cases i.e. the plate moving with more or less velocity as compared to that of free the stream velocity. All the results are shown graphically. The Skin friction coefficient, couple stress coefficient, Nusselt number and Sherwood number giving the rate of the surface, are also computed.

Keywords: **Thermal radiation; Chemical reaction; MHD; Micropolar fluid; Viscous dissipation**

List of Symbols:

Roman letters

C	concentration of the fluid (Kmol m^{-3})
C_∞	concentration at infinity of the fluid (Kmol m^{-3})
C_w	surface concentration of the fluid (Kmol m^{-3})
C_f	coefficient of skin friction
C_p	specific heat at constant pressure, J/kg K
Ec	Eckert number
f	dimensionless stream function
g	dimensionless angular momentum
Gc	local solutal Grashof number
Gr	local modified Grashof number
K	dimensionless coupling parameter
K_1	coupling constant
K_f	thermal diffusivity of the fluid, W/mK
Kr	Chemical reaction parameter
M	magnetic parameter
N	micro-rotation component
Nu	Nusselt number
Pr	Prandtl number

The theme and its reflections in Khushwant Singh's Train to Pakistan

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ABSTRACT:

Train to Pakistan is a prominent novel by **Khushwant** Singh presents the pre-and post – partition situations in Mano Majra.. Partition makes communal violence and horror. Partition of Indian sub-continent is one of the most terrible events in the history of the sub-continent. The sub-continent got freedom in 1947 along with its vivisection on the communal basis which leaves us puzzled weather the year 1947 is worthy to be remembered for the independence or for the massacre and atrocities during involuntary migration of a huge mass of people for their existence. Various writers have attempted to deal with the theme of partition of Indian sub-continent in their works. The present paper discusses the theme and it's reflections in **Khushwant Singh's Train to Pakistan**. He witnessed the event and tried to depict the terror of the Conflict and suffering of people during those days in his novel.

Keywords: - Migration, Multiculturalism, Hypocrisy, Exploited, Communal violence.

Introduction:

Khushwant Singh's Train To Pakistan (1956) deals with eruption of violence between the Sikhs and the Muslims in a small village Mano Majra along the newly established Indo-Pakistan border the carnage is seen through the eyes of the Sikh and muslims community, who in spite of having lived peacefully together for several centuries, suddenly turned enemies. Paradoxically, Khushwant Singh has used all his imaginative power to present a realistic picturisation.

People of Sikh, Hindu and Muslim religions live together, happily. There are only three bricks building, one of money lender, **Lala Ram Lal** and others two of **Sikh temple and the mosque**. Mano Majra situated at the bank of Sutlej River in Punjab and known for the railway station. There is close association between people, nature, religion and train. The day begins with crows, bats, mullah, Sikh priest and arrival of mail train early in the morning and ends with passing goods train at night, men works in the fields and women are at home. The people in this village pray for blessings from divine power to **all Hindus, Muslims, Sikhs and pseudo-Christians**.

The novel 'Train to Pakistan' is the realistic and Painful picture of Mano Majra before and after partition of India and Pakistan. **Khushwant Singh** portrays multiculturalism, political idealism, communal violence, pain, agony, trauma of partition, humor, bribery, hypocrisy, drunkenness, unfair

Nationalism and Narrative Technique in Amitav Ghosh's 'The Shadow Lines'

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Abstract

Amitav Ghosh's novel **The Shadow Lines** published in **1988** is a significant contribution to the post colonial literature of Indian English writings in English. Set in the middle class milieu of Calcutta it spans over almost eighty years and covers three generations of characters. It also extends over three countries and has as its backdrop all major political disruptions faced by these countries. The novel does not follow a linear development chronicling the events in the narrator from childhood to maturity it adopts stream of consciousness style interspread with straight narrative, stories and newspaper reportage of public events. This paper essentially traces how the narrator comes to terms with reality. This has been one of the predominant themes of modern novelists faced with today's complex world.

***Key words*:** Nationalism, Consciousness, Relationship and Reality

Introduction

Amitav Ghosh in his second novel The Shadow Lines gives a new twist to an old theme of partition. The 'lines' symbolically represent all such lines that divide peoples in the name of nationalism, religion, language and caste. Ghosh's novel The shadow Line, the story is woven around two families, the Datta-Chaudhuris of Bengal and the Prices of London and their relationship which spans three generations. Beginning in colonial times, and ending a little after the creation of East Pakistan in the 60s, the story narrates significant events – private and public – and their meaning, as they touch and reveal the character of the members of these two families. The setting for these events is equally extensive and includes three countries – India, England and Bangladesh. The Shadow Lines we draw between people and nations which is both an absurd illusion and a source of terrifying violence.

Analysis and Interpretation

The Shadow Lines does not follow a linear development but has multiple layers of themes and a complex narrative structure. It is interesting to see how the unnamed narrator weaves together the multiple

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History of Colonial and Opium Trade in Amitav Ghosh's Sea of Poppies

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Abstract:

Sea of Poppies (2008) by Ghosh short listed for the year's **Man Booker Prize** and received favorably by the Booker Jury for its compelling story told against an epical historical canvas. It is the first volume in the projected Ibis Trilogy and considered as "one of the masterpieces of the twenty-first century fiction. The setting of the novel is the colonial period of ***1838*** when the economy of **Bengal and Bihar** was dominated by East India Company's monopoly of opium trade in India. The events and the incidents of the novel throw light on the social, political and economic history of colonial India. Ghosh's draws his material from history and anthropology to weave the story. It is the story of the girmitiyas- the indentured labourers, the poppy growing **Peasants, Lascars, Migrants**, exiled and displaced peoples whose story has been intertwined with the aspect of imperial trade and commerce in British history.

Keywords:- *Anthroplogy, Subalternity, Marginality, Migrants, Colonialism, Imperialism.*

Introduction

Sea of Poppies is a stunning and vibrant novel that confirms the reputation of Ghosh as a master storyteller. The Ibis, a former slave ship has been refitted to make a voyage from Calcutta, across Indian Ocean to Mauritius. As for the people on board are a motley array of sailors, stowaways, girmitiyas, lascars, coolies and convicts. It is a historical novel that owes to the distinctiveness of characters. The novel reveals the social anthropological concerns of Ghosh in presenting the issues such as Subalternity, Marginality in association with class, caste, race and gender.

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Impacts and Controlling Measures for Radionuclides

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Abstract Scientific research studies declared that in a short span of time, there will be severe environmental and human health hazards may occur due to radioactive chemicals. Living organisms' exposure to either low level or high level radiation may cause deep impact on their survival. It disturbs our living environment and does not allow further generations to lead healthy lives. Radiation effects human health in various ways, such as skin burns and acute radiation syndrome (Radiation sickness). It can also result in long term health effects such as cancer and cardiovascular disease. Though the impact of radiation is in low level, that causes gradual health disorders and leads to cancer risk. So, in the present paper I would like to study on radiation, its impacts on environment and human health in various ways, hazards of radiation, and controlling measures.

Keywords: *radiation, impact, human health, environment, hazards*

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1. Introduction

Natural sources of ionizing radiation include cosmic rays and Nucleiodes such as Potassium-40, Carbon-14 and Isotopes of Thorium and Uranium which are present in rocks, earth and building materials. Industrial sources of radiation include nuclear reactors, X-ray radiography, electron microscopy, X-ray diffractions, thickness gauges, smoke detectors, electron beam welding and certain processes. Including chemical analysis polymer curing, chemical/biological tracing, food and medical sterilization and mining, the radiation source can be sealed, when the radiation can be switched off or unsealed.

2. Sources of Ionizing Radiation

Ionizing radiation enters our lives in a variety of ways. It arises from natural processes such as, the decay of uranium in the earth and from artificial processes like use of X-rays in medicine. So Ionizing radiation sources are two types. One is natural source and the other is industrial or artificial source.

(i) Naturally occurring radioactive materials:

The cosmic rays, gamma rays from the earth, Radon decay products in the air and various radioactive nuclides found naturally in food and drink.

(ii) Artificially occurring radioactive materials:

Medical X-rays fallout from the testing of nuclear weapons in the atmosphere, discharge of radioactive waste from the nuclear industry, industrial gamma rays and miscellaneous items such as consumer products.

3. Various Types of Radiation

The nature of the radioactive decay is characteristic of the element; it can be used to 'fingerprint' the substance. Decay continues until both the original element and its daughter isotopes are non-radioactive. The half life, i.e. the time taken for half of an element's atoms to become non-radioactive, varies from millions of years for some elements to fractions of a second for others.

i) **α-Particles** (helium nuclei, that is 2 Neutrons + 2 Protons): on emission of the original isotope degrades into an element of two atomic numbers or less, e.g. Uranium-238 produces Thorium-234. Such transformations are usually accompanied by γ-radiation or x-radiation. α - particles have a velocity above one tenth that of light within a range in air of 3-9 cm. Because of their relatively large size and double positive charge they do not penetrate matter very readily and are stopped by paper, cellophane, aluminum foil and even skin. If inhaled or ingested, however, absorption of α-particles with in tissues may cause intense local ionization.

ii) **β-Rays** comprise electrons of velocity approaching that of light with a range of several metres and an energy of 0-4 MeV. β-particles of <0.07MeV do not penetrate the epidermis whereas those >2.5MeV penetrate 1-2 cm of soft tissue. Thus β-emitters pose both an internal and an external radiation hazard: skin burns and malignancies may result. Once inside the body they are extremely harmful, though less so than γ-rays. About 1mm of aluminum is needed to stop these particles. Most β-emissions are accompanied by γ- or X-radiation

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A Review on Current Trends in ELT

Abstract

In this world of gizmos , the field of language is changing at a drastic rate. Traditional conceptions of education are giving way to more newer , innovative ways of thinking about how we learn , teach and acquire knowledge. Teaching of English using technological gadgets has become a vogue in many educational institutions. The usage of such technologies in the class room has entirely changed the facet of traditional system of education. The theories and methodologies are constantly evolving in the field of ELT . This paper analyses the current trends which are playing an instrumental role in English language teaching.

1. Introduction

A plethora of books have been published in English language presenting a manifold of voices which try to liberalize old and traditional methods of teaching English. This paper aims at improvising teaching methodology with new techniques in ELT , handling slow learners to enhance their communication skills in a very easy manner and implementing the

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The Significance Of English Language Skills And Vocabulary Learning For Budding Engineers

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ABSTRACT

In this world of gizmos, there is cut-throat competition around the world and to become successful and competent the engineering students need to acquire communication skills and vocabulary treating it as a matter of urgency. It is a well-known fact that science and engineering are the two emerging fields of study in 21st century, which play pivotal role in shaping the modern world. The students of these two studies require good communicative competence and vocabulary to succeed in their personal and professional life. The fact of the matter is most of the Indian engineering students hail from rural areas and rural medium backgrounds they feel like a fish out of water whenever they supposed to speak in English. So this incompetence of communicating in English using good vocabulary is the only reason behind their dismal performances during job interviews. This paper tries to explain the significance and the much touted need of learning English language and vocabulary for engineering students.

Keywords: *English language, Infirmities of students, Role of English language teachers*

INTRODUCTION

It is a well-known fact that Man has been acquiring the worldly knowledge through the language. In all of his efforts throughout the life he primarily depends on his own native language or mother tongue to acquire the knowledge. As the world is fast evolving itself into a Global village, man has found the importance of learning a unique language which helps him understand the world and that language proved to be 'English'. In this modern world, a child from the time of his /her birth is gaining the knowledge of society, knowledge of relations, culture, traditions, and even knowledge of various subjects through English language alone . For a few nations only English stands first prior to their native language and for most of the countries it is a second language.In countries like India we come across many regional languages as a result, though people learn the academic subjects in English, the usual way of communication is in their own mother tongue or native language.

This paper especially deals with the study of engineering aspirants for whom English language

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The Concept of Morality and Ethics in Indian Philosophy

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ABSTRACT

In modern era, people seem to have underrated the necessity of ethics and moral values in their lives. Fame and income have taken frontline priorities and people seem to have running after them which can be achieved out rightly by following the path of truthful life imbibing morals and ethics. Hence, this is the time to speak about the accepted behavior of human beings needed for amicable existence with fellowmen. According to long standing Indian culture man should cultivate obedience, respect, determination, and commitment to lead his life on the path of *Dharma.* Man's inner peace depends on this tenet rather than material possessions. Though man lives in technologically advanced world, there is a dire need for the present generation to know about the philosophy in connection with moral and ethical values. The present paper focuses on the ethics and religion as stated in Indian philosophy with reference to various philosophers.

KEY WORDS: Ethics and Moral Values, Dharma, Philosophy.

India has a long, rich, and diverse tradition of philosophical thought nurtured through two and a half millenniums. The diversity has encompassed several major religious traditions. With the diverse nature of these religious traditions,

Life is irreplaceable for every creature on the earth. Nature and environment are deeply associated to life of all living creatures. In connection with this, the daily routine on our Earth

HEAT AND MASS TRANSFER ANALYSIS OF CU-WATER NANOFLUID OVER A STRETCHING SHEET

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Abstract: A numerical investigation is carried out for a study three dimensional heat and mass transfer analysis of Cu- water nanofluid over a stretching sheet. The non-linear partial differential equations have been converted into non-linear ordinary equations using suitable similarity transformations. The obtained dimensionless equations are solved by Runge-Kutta method of fourth order along with shooting technique. The results are presented through graphs and tables for various parameters on velocity, temperature, concentration, Skin friction, Nusselt number and Sherwood number. It is observed that, for increasing values of stretching parameter primary velocity, temperature, Skin friction along x-axis decreases and achieved reverse trend in the case of concentration, Skin friction along y-axis and Nusselt number.

Key words: Heat and Mass transfer, MHD, Cu-water nanofluid, Thermal radiation 3D flow, Free convection.

Nomenclature:

a	stretching constant
B_0	magnetic flux
C	concentration of the fluid
D_B	mass diffusion coefficient
f	dimensionless stream function
f'	dimensionless velocity
k_f	thermal conductivity of the fluid
k_{nf}	effective thermal conductivity of the nanofluid
k_s	thermal conductivity of the solid
M	magnetic parameter
Pr	Prandlt number
q_r	radiative heat flux
R	radiation parameter
S	mass transfer parameter
T	temperature of the fluid
u, v, w	fluid velocity components along x, y, z directions respectively

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RESEARCH ARTICLE

Heat and Mass Transfer Characteristics of Nanofluids in a Rotating System: A Convective Boundary Layer Flow

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Abstract: ***Introduction*:** Convective heat and mass transfer in nanofluids is a topic of major contemporary interest in both science and technology. In view of this, an unsteady MHD free convective flow of nanofluids through a porous medium bound by a moving vertical semi-infinite permeable flat plate with a constant heat source and convective boundary condition in a rotating frame of reference is studied theoretically.

***Experimental*:** The novelty is the consideration of constant heat source and convective boundary condition in a rotating frame. The velocity along the plate *i.e.*, slip velocity is assumed to oscillate in time with constant frequency so that the solutions of the boundary layer are of the same oscillatory type. The dimensionless governing equations for this investigation are solved analytically using small perturbation approximation. Two types of nanofluids, namely Cu-water and Al_2O_3-water are used.

***Results*:** The effects of various parameters on the flow, heat and mass transfer characteristics are discussed through graphs and tables.

***Conclusion*:** An increase in the convective parameter and nanoparticle volume fraction leads to increase the thermal boundary layer thickness but opposite effect occurs for heat generation.

Keywords: Nanofluids, MHD, convective boundary, heat and mass transfer, rotating system, porous medium.

1. INTRODUCTION

Convective heat transfer in nanofluids is a major contemporary topic in sciences and engineering. Now- a- days, the development of high-performance thermal systems for heat transfer enhancement has become popular. The enhancement of heating and cooling fluids in an industrial process saves energy, time and lifespan of the equipment. Heating and cooling fluids such as water, ethylene glycol and engine oil play a vital role in the thermal management of high tech industries but they exhibit poor thermal characteristics in a certain thermal conductivity. To understand the heat transfer performance for the practical applications, a number of works have been performed. As solid materials possess higher thermal conductivities, many studies have been carried out on thermal properties of suspension of solid particles in conventional heat transfer fluids. Modern technology offers physical and chemical routes to prepare nanometer-sized particles or nanostructured materials engineered on atomic or molecular scales with enhanced thermophysical properties compared to their respective bulk forms. Choi [1] introduced the word nanofluid first which represents the fluid in nanoscale particles (diameter less than 50 nm) which are suspended in the base fluid. Aluminum, copper, iron and titanium or their oxides have been used most commonly for the preparation of nanofluids. Some experimental studies [2-6] show that even with the small volumetric fractionof nanoparticles (usually < 5%), and the thermal conductivity can be enhanced by 5% to 20%. The improved thermal conductivity of nanofluid together with the thermal conductivity of the base liquid and turbulence induced by their motion contributes to a remarkable enhancement in the convective heat transfer coefficient. This feature attracts the use of nanofluids in nuclear reactors [7]. The major applications of nanofluids involve improving heat transfer efficiency, engine cooling, solar water heating, minimal clogging, cooling of electronics, cooling of transformer oil, improving diesel generator efficiency, cooling of the heat exchanging devices, domestic refrigerator-freezers, cooling in machining, in nuclear reactor and defense of machines. In recent years, convective boundary layer flow in porous media has been studied due to wide applications in engineering such as heat exchangers, geothermal reservoirs, oil recovery, thermal insulation, solar collectors, underground energy, building construction *etc*. Convective boundary layer flows in porous media have been studied by few authors [8-14]. MHD free convective fluid flows with porous media have many applications in engineering, industrial, geophysics, meteorology, biomedical engineering, *etc*. like drying process, geothermal reservoirs, underground energy transport,

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Three dimensional boundary layer flow of water based coupled stress nanofluid over a bidirectional linear stretching sheet in the presence of heat source, thermal radiation and chemical reaction

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Abstract

The present investigation represents a study on the effects of heat and mass transfer flow in the presence of couple stress coefficient, heat source parameter, radiation parameter, chemical reaction parameter and Schmidt number using nanofluids over a stretching sheet. The governing partial differential equations are reduced to ordinary differential equations with the help of suitable similarity transformations and solved numerically by Shooting method using MAT lab code under the boundary conditions. The results are illustrated through graphs and tables. The present results are compared with the results by Gosh et al. (2018) in the absence of heat source parameter, chemical parameter and Schmidt number. It is observed that the present results coincide with the results by Gosh et al. (2018) and attain good agreement. We observed that both nanofluid velocities increase due to the increase in couple stress parameter. The concentration decreases for the increasing values of the chemical reaction parameter and stretching parameter ratio and we noticed that the temperature decreases for the increasing values of the heat source parameter.

Key words: Couple stress, Heat and mass transfer, Chemical reaction, Nanofluid, Stretching sheet.

1. Introduction

Nanofluids have many applications in the field of engineering, industry, military etc., due to its enhanced thermo physical properties. Choi et al. (2001) proposed that nanofluid is a mixture of nanoparticles usually 1 to 100 nm sized particles such as Cu, Ag, Au, Al metals and metal oxides, carbides etc. that are suspended in base fluids such as oil, water, ethylene etc. Nanofluids have many uses in cooling electronic micro chips, nuclear reactors and transformers. Nanofluids are used in designing the equipment used in heat surgery, cancer treatment, solar water heating etc. Some experimental studies were done on small volumetric fraction of nanoparticles and new

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BUOYANCY EFFECTS ON CHEMICALLY REACTIVE MAGNETO-NANOFLUID PAST A MOVING VERTICAL PLATE

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Abstract: The present work is a study on free convective heat and mass transfer characteristics of chemically reactive magneto-nanofluid flow through a vertical moving porous plate in conducting field. A water-based nanofluid with the combination of alumina is considered in this analysis. The governing equations of motion are solved by applying the finite difference method. The influence of different parameters on fluid velocity, temperature, concentration, shear stress, rate of heat transfer and rate of mass transfer are presented graphically and discussed. The novelty of this study is the consideration of occurrence of chemical reaction. The influence of chemical reaction leads to an enhancement in the concentration of the fluid and a diminution in its temperature.

Keywords: Free convection, Magneto-nanofluid, Heat generation, Moving vertical porous plate, Conducting field and Chemical reaction.

2010 AMS Mathematics Subject Classification: 76M20, 76S05, 76S99, 76V05, 76V99, 76W05, 76W99, 80A32, 80M20.

1. INTRODUCTION

Nanofluids are formed by mixing different nano particles into base fluid. Such fluids play a significant role in the industries and chemical factories because of their unique physical and chemical properties. These fluids are more utilized by the industrialists based on their high thermal conductivity when compared to other fluids. Magnetohydrodynamic (MHD) flow with heat and mass transfer has essential applications for real world problems in physics, chemistry and engineering. MHD boundary layers are considered and implemented effectively in various technical fields employing liquid metals and also plasma flow of magnetic fields. In the recent years many researchers have contributed in studying the influences of electrically conducting nanofluids in the presence of a magnetic field on the flow and heat transfer of an incompressible viscous fluid. A review of convective heat transfer enhancement with nanofluids was given by Kakac and Pramuanjaroenkij [1]. Turkyilmazoglu [2] presented exact analytical solutions for heat and mass transfer effects on magnetohydrodynamic slip flow in nanofluids. Srinivasacharya and Srinivasacharya and Upendar [3] analyzed

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Effects of Chemical Reaction and Radiation on MHD Convective Casson Fluid Flow

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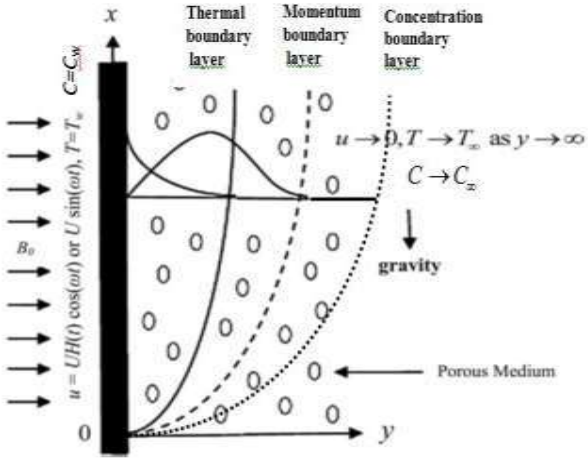
Abstract: ***This manuscript presents a detailed numerical study on the influence of radiation, radiation absorption and chemical reaction on unsteady magneto hydrodynamic free convective heat and mass transfer flow of a heat generating Casson fluid past an oscillating vertical plate embedded in a porous medium in the presence of constant wall temperature and concentration. The non dimensional governing equations along with the corresponding boundary conditions are solved using finite difference method numerically. Effects of various emerging flow parameters on velocity, temperature and concentration are presented graphically and analyzed. Expressions for skin-friction, Nusselt number and Sherwood number are also obtained. Concentration of Casson fluid increases for increasing values of Schmidt number and chemical reaction parameter.***

Keywords: Casson fluid, MHD, porous medium, heat and mass transfer, chemical reaction, radiation absorption and heat generation.

1. Introduction:

The studies on non-Newtonian fluids plays a vital role in many industries and so researchers are showing interest on these fluid flows in recent years. In general, non-Newtonian fluid is treated as elastic solid. Casson fluid is one of the non - Newtonian fluids. It can be defined as a shear thinning liquid which is supposed to have an infinite viscosity at zero rate of shear and a yield stress under which no flow occurs and zero viscosity at an infinite rate of shear. If yield stress greater than the shear stress is applied to the fluid, it behaves like solid. If yield stress less than the shear stress then the movement in the fluid starts. It is first invented by Casson in 1959. It is based on the structure of liquid phase and interactive behavior of solid of a two-phase suspension. Some examples of Casson fluid are Jelly, honey, tomato sauce and concentrated fruit juices. Human blood can also be treated as a Casson fluid in the presence of several substances such as fibrinogen, globulin in aqueous base plasma, protein, and human red blood cells. Many researchers considered the flow of Casson fluid and analyzed it under the influence of different physical parameters and also variety of boundary conditions. Animasaun (I) analyzed the effects of thermophoresis, variable viscosity and thermal conductivity on free convective heat and mass transfer of non-Darcian MHD dissipative Casson fluid flow with suction and nth order of chemical reaction. Benazir et al. (II) studied magnetohydrodynamic Casson fluid flow over a vertical cone and flat plate with non-uniform heat source/sink. Chandra Reddy et al. (III) revealed on Casson fluid flow over a vertical porous plate under the existence of cross diffusion effects in conducting field. Cogley et al. (IV) considered a differential approximation for radiative transfer in a non-gray gas near equilibrium. Daba and Devaraj (V) considered unsteady hydromagnetic chemically reacting mixed convection flow over a permeable stretching surface with slip and thermal radiation. Dash et al. (VI) analyzed Casson fluid flow in a pipe filled with a homogeneous porous medium. Hayat et al. (VII) analyzed mixed convection flow of Casson nanofluid over a stretching sheet with convectively heated chemical reaction and heat source/sink. Hayat et al. (VIII) reported Soret and Dufour effects on magnetohydrodynamic (MHD) flow of Casson fluid. Hussanan (IX) studied unsteady boundary layer flow and heat transfer of a Casson fluid past an oscillating vertical plate with Newtonian heating. Kandasamy and Pai (X) found and examined entrance region flow of Casson fluid in a circular tube. Kataria and Patel (XI) examined radiation and chemical reaction effects on MHD Casson fluid flow past an oscillating vertical plate embedded in porous medium. Khalid et al. (XII) considered and studied unsteady MHD free convection flow of Casson fluid past over an oscillating vertical plate embedded in porous medium.



Physical diagram of the problem

The tensor of the Casson fluid can be written as

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MATHEMATICAL ANALYSIS OF NON-NEWTONIAN FLUID FLOW PAST AN INCLINED PLATE

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In this paper, we have investigated an unsteady, magnetohydrodynamic (MHD), convection flow of a double diffusive, viscoelastic fluid past an inclined permeable plate in the presence of viscous dissipation and heat absorption. A transverse magnetic field of uniform strengths is applied perpendicular to the plate along the direction of the flow. The nondimensional governing equations have been solved by using a multiple perturbation method, subject to the corresponding boundary conditions. The effects of various physical parameters on flow quantities such as velocity, temperature, and concentration are studied through graphs. The expressions for local skin friction, Nusselt number, and Sherwood number are derived and discussed with the help of tables. We notice that the temperature decreases with increasing values of radiation parameter and shows reverse tendency in the case of skin friction and Nusselt number.

KEY WORDS: *MHD, viscoelastic fluid, free convective, inclined plate, multi-perturbation method*

1. INTRODUCTION

The studies related to magnetohydrodynamic (MHD) free convection flow are significant in manufacturing liquid metals, electrolytes, and ionized gases. The ionized gas or plasma can be made to interact with the magnetic field and alter heat transfer and friction characteristics. Recently, it has been of great interest to study the effect of magnetic field on the temperature distribution under simultaneous heat and mass transfer due to its role in many industries. Some researchers considered and reported the characteristics of viscoelastic flows over accelerated plates as well as inclined plates. Agarwalla and Ahmed (2018) analyzed MHD mass transfer flow past an inclined plate with variable temperature and plate velocity embedded in a porous medium. Ananda Reddy et al. (2010) investigated the effects of unsteady free convective MHD non-Newtonian flow through a porous medium bounded by an infinite inclined porous plate. Barik et al. (2014) considered the thermal radiation effect on an unsteady MHD flow past an inclined porous heated plate in the presence of chemical reaction and viscous dissipation. Bhargavi and Reddy (2018) considered an analytical study of forced convection in a channel partially filled with porous material with the effect of the magnetic field. Bhukta et al. (2016) found numerical simulation of the heat transfer effect on an Oldroyd 8-constant fluid with wire coating analysis. Chamkha and Khaled (2001) studied similarity solutions for hydromagnetic simultaneous heat and mass transfer by natural convection from an inclined plate with internal heat generation or absorption. Chamkha (2002) considered hydromagnetic combined convection flow in a vertical lid-driven cavity with internal heat generation or absorption. Chamkha et al. (2002) investigated natural convection from an inclined plate embedded in a

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NUMERICAL STUDY OF MHD BOUNDARY LAYER FLOW OF A VISCOELASTIC AND DISSIPATIVE FLUID PAST A POROUS PLATE IN THE PRESENCE OF THERMAL RADIATION

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In this manuscript, an investigation is done to analyze various properties of fully developed free convective flow of a viscous incompressible electrically conducting viscoelastic and dissipative fluid past a vertical porous plate bounded by a porous medium in the presence of thermal radiation and variable permeability. A magnetic field of uniform strength is applied perpendicular to the plate, and the presence of a heat source is also considered. The coupled dimensionless nonlinear partial differential equations are solved numerically by finite difference method. The numerical computations have been studied through graphs. The presence of thermal radiation decreases the temperature, and an opposite nature is shown in the case of Eckert number.

KEY WORDS: *MHD, thermal radiation, variable suction, variable permeability, vertical porous plate, heat and mass transfer*

1. INTRODUCTION

The study of magnetohydrodynamic (MHD) viscoelastic fluids with radiation effect past a porous medium plays a significant role in many scientific, industrial, and engineering applications. This flow was essentially utilized in the fields of petroleum engineering concerned with oil, gas, and water through a reservoir in the analysis of the migration of underground water. To recover the water for drinking and irrigation purposes, the principles of this flow are followed. Many researchers identified the importance of this flow and contributed in studying the application of viscoelastic fluid flow of several types past a porous medium in the presence of thermal radiation. Mahdy et al. (2015) studied thermosolutal Marangoni boundary layer MHD flow with the Soret and Dufour effects past a vertical flat plate. Kairi and Murthy (2009) discussed the effect of melting and thermodiffusion on natural convection heat mass transfer in a non-Newtonian fluid-saturated non-Darcy porous medium. Mukhopadyay and Mandal (2015) analyzed MHD mixed convection slip flow and heat transfer over a vertical porous plate. Mukhopadhyay et al. (2012) investigated forced convective flow and heat transfer over a porous plate in a Darcy-Forchheimer porous medium in the presence of radiation. Ahmed and Kalita (2012) discussed MHD transient flow through a porous medium bounded by a hot vertical plate in the presence of radiation. Kumar and Varma (2011) considered thermal radiation and mass transfer effects on MHD flow past a vertical oscillating plate with variable temperature effects and variable mass diffusion. Ravi Kumar et al. (2014) examined the combined effects of heat absorption and MHD flow on convective Rivlin–Ericksen flow past a semi-infinite vertical porous plate with variable temperature and suction. Sharma and Ajaib

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Buoyancy Effects on Unsteady MHD Chemically Reacting and Rotatin Fluid Flow Past a Plate in a Porous Medium

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Keywords: Unsteady flow, moving plate, thermal radiation, rotating fluid, porous medium.

Abstract. An unsteady magnetohydrodynamic (MHD) natural convection transfer of mass and heat flow over a vertical porous sheet under the influence of thermal radiation and thermo-diffusion effect. The dimensionless governing equations are solved analytically by employing Laplace transform technique. The impact of various physical parameters on momentum, energy and concentration are discussed and analyzed with the aid of graphs. Furthermore, the numerical values for local Skin friction, Nusselt number and Sherwood number are noted and examined. Increasing the values of thermal diffusion results in increasing of the concentration, but it decreases with Schmidt number. Skin friction reduces for increasing values of thermo-diffusion are discussed with the help of tables.

Nomenclature

B_0	Magnetic field strength
c_p	Specific heat at constant pressure
C_w^*	Concentration at the wall
C	concentration
C^*	Species concentration
C_∞^*	Concentration away from the wall
G	Acceleration due to gravity (m/s^2)
G_r	Grashof n mber
G_m	Solutal Grashof n mber
K	Thermal conductivity
$k*$	Permeability of porous medium
M_1	Constant
M_2	Magnetic field parameter
P_r	Prandtl number
q_r	Radiative heat flux
So	Soret number
Sc	Schmidt number
T_w^*	Wall temperature
$T*$	Fluid temperature (K)

Relevance and Resourcefulness of Business Communication Course Contents: A Critical Evaluation in the State of Andhra Pradesh

Patlegar Vijaya kumar, Laxmi Dhar Dwivedi,

ABSTRACT; ***In the context of career opportunities and job prospects, possessing good communication and employability skills in campus drives is one of the most significant areas to be improved in a life of management students. In order to achieve this, Business Communication course in a two year MBA programme is viewed in a positive perspective in terms of reaching their goals and reducing the unemployment rate among management graduates.***

In this connection, the present study specifically aimed at critically examining the Course Contents of the Business Communication course for MBA programme in select institutions of Andhra Pradesh. Structured questionnaire has been administered to major stakeholders (i.e. students and faculty) and HR personnel to collect data which is further analyzed both quantitatively and qualitatively. Using the descriptive analysis and frequency distribution method, the results and viable recommendations are provided to the respective university officials to customize the course contents of Business Communication course as per the students' and industry needs.

Key words: In the context of career opportunities and job prospects,

I. INTRODUCTION

In present days, Master of Business Administration has become a golden key for young managers to open the doors for successful careers. As the job opportunities in Multi-National Companies, Private or recognized Banks and Media are increasing, so the demand for this course. Simultaneously, the range of candidates for this course is from undergraduate to senior professionals, employed to entrepreneurs, from primary sectors (such as agricultural and mining) to secondary sectors (production and manufacturing) to tertiary sectors (banking). The students who opt and enroll for MBA are varied demographically in case of age, qualification and experience. This momentum has come due to the right fulfillment of course objectives and learners' needs. In this regard, universities are keen in providing the right platform and opportunities for MBA participants to improve better language skills by introducing Business Communication course.

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They are expected to gain the required oral and written skills along with the Basic English skills like grammar, vocabulary, punctuation, pronunciation besides the concepts of business communication. Such courses which come under the category of ESP are being offered in various universities as a part of MBA programme. The syllabus contents of this course at this level of study are obviously different from the general English syllabus which focuses more on grammatical aspects and literary appreciation and less on acquisition of communication skills.

MAs the course of Business Communication is equally challenging and at par with the core subjects prescribed for the students of MBA and as it is also one of the determining factors in accomplishment of jobs, a thorough evaluation of course components gains upmost significance. Hence, the present study aims to examine such issues related to Business Communication course and its implementation in the state universities of Andhra Pradesh.

1.1. THEORETICAL FRAMEWORK

As a part of the critical evaluation of course components, an attempt was made to take a holistic look at some relevant fields related to the present research such as **Language in India** (Indian Education Commission (1964-66); National Knowledge Commission), **English Language in India (**Indian Universities Commission (1902) etc.,, **English for Specific Purposes** (Tom Hutchinson and Alan Waters (1987); Richards (2001); Chiu's (1972); Dudley Evans and St John (1998); Allen and Widdowson (1974); Carter (1983) etc., **Needs Analysis** (Richterich and Chancerel (1977); Munby (1978); Mackay and Bosquet (1981) etc.,, **Curriculum Evaluation** (Stern (1983); Taylor (1970); Cunningsworth, (1984); Davies, A. (1984); Scriven (1967); Parlet & Hamilton, 1972).

II. OBJECTIVES OF THE STUDY

1. To critically evaluate the Business Communication course contents in selected AICTE recognized universities / institutes which offer post graduate degrees equivalent to MBA in the state of Andhra Pradesh.
2. To conduct a needs analysis of students in the selected institutions /universities to identify needs and deficiencies of the course contents in order to gain a comprehensive perception of the syllabi prescribed for analysis.
3. To suggest possible recommendations to restructure the Business Communication course syllabus on the basis of findings.

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COUPLE STRESS EFFECTS OF HEAT AND MASS TRANSFER FLOW OF NANOFLUIDS OVER A STRETCHING SHEET

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ABSTRACT

The present study to investigate the effects of heat and mass transfer flow in the presence of couple stress coefficient and Schmidt number using nanofluids over a stretching sheet. The governing partial differential equations are converted into ordinary differential equations with the help of similarity transformations and solved numerically by Shooting method using MAT lab subjected to the boundary conditions. The results are discussed through graphs and tables. It is observed that the present results are matched with the results by Gosh[16] and attained good agreement. We observed that both the nanofluid velocities increases due to increase in couple stress parameter. The concentration decreases for the increasing values of the stretching parameter ratio.

Key words: *Couple stress, Nanofluid, Stretching sheet, Heat transfer, Mass transfer, Radiation.*

Nomenclature:

a, b	stretching constants
B_0	magnetic flux
C	concentration of the fluid
D	mass diffusion coefficient
f	dimensionless stream function
f'	dimensionless velocity
K	coupled stress coefficient
k_f	thermal conductivity of the fluid
k_{nf}	effective thermal conductivity of the nanofluid
k_s	thermal conductivity of the solid
Pr	Prandlt number
q_r	radiative heat flux
R	radiation parameter
S	mass transfer parameter
Sc	Schmidt number
T	temperature of the fluid
u, v, w	fluid velocity components along x, y, z directions respectively

Subscripts:

nf	nanofluid
f	base fluid

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THE MAJOR THEMES AND THE CONCEPT OF NATIONALISM IN AMITAV GHOSH'S THE CIRCLE OF REASON

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Abstract

Amitav Ghosh commands a very higher position among the Indian writers in English. The national and International awards and rewards stand as a fruitful testimony to his uncompetitive success. Amitav Ghosh is talented, innovative and an experimentalist. He is a true artist who writes with considerable potential and he has succeeded in exciting his narrative skill purposefully. He is also one of the eminent authentic voices of the Indian Diaspora, who has enhanced the honour and stature of the Indian writings in English.

THE CIRCLE OF REASON(1986) is, at once, a detective story, a story of exile, a travelogue, a women"s rights track, a Marxist protest, a plea for humanistic camaraderie etc. The narrative techniques employed here, sometime share the characteristics of magic realism. They are more generally straightforward and realistic. The author tends to juggle a lot of characters, time zones, and locales in the telling of his story. The East-West encounter is one of the major themes of the novel and an issue related to the concept of „Nationalism" is commented upon.

Keywords: *Nationalism, Diaspora, Juxtaposed, globalization, discrimination, exploitation.*

Introduction

Amitav Ghosh's first novel the Circle of Reason (1986) places him immediately as a master craftsman in the art of fiction. It is about a eight-year-old orphan boy who is searching for identity, searching for roots or searching for his own nativity with tragic diasporic experiences.

The word ‗Diaspora' depicts alienation from the motherland and missing of her roots, cultural dislocation emotional turmoil, conflicts between the values of the motherland and those of the western world. It explores the problems of accommodation and adjustment with the new society, the memories of the post, racial discrimination, hybridity, a sense of being immigrant and marginalized in the adopted home land, and so on and so forth.

The circle of reason is a tale of adventures of Alu, who is the protagonist in the novel. Balarambose, who is Alu's foster –father, is impressed by the ideas of the scientific reasoning, the impact of the western world and the books of louis Pasteur. He wants to set the village free from the ideas of myth and superstition. In working for the same, he destroys the whole village, by making use of carbolic acid.

In the process of purification Balaram, Torudevi, Maya and Rekhal are burnt to death and Alu is left alone. He is charged with sedition and extremism by the police. And hereafter the journey of Alu's dislocation begins. To escape from the police and forthcoming punishment, he runs away from Lalpukur to Calcutta, from Calcutta to Kerala, from Kerala to the imaginary gulf country there, and from al-ghazira finally to Algeria through Alexandria, Egypt, Lisbon, Tunis and elouded. In the course of his experimental journey the protagonist comes across many diasporic men and women, and faces the varied immigrant experiences, events and situations. Ghosh wants to explore the protagonist's earnest quest for self –identity and exploration.

Discussion & Interpretation

The novel opens when an eight-year-old orphan Nachiketa Bose comes to live with his uncle in Lalpukar, Boloida chases his rickshaw. Boloida runs a cycle repair shop and eagerly utilizes every opportunity of employment. The only remarkable thing about this orphan is his extraordinary head. It is huge, several times too large for an eight-year-old boy, and curiously uneven, bulging all over with knots and bumps. Everyone compares his head with different objects and brings it to a different perspective. Boloida gives Alu his lifelong name as well as part of his identity. -No, it's not like a rock at all. It is an Alu, a potato, a huge, freshly dug lumpy potato. So Alu he was named and Alu he was to remain.‖[1].

Another character is Balram who is a freak. He claims to be rationalist. He admires scientists like Jagdish Bose, Meghnad Saha and above everyone Louis Pasteur. They are his ideals. He is obsessed with the science of phrenology. Phrenology is the study of the size and shape of the heads of the people. It is believed that one can find out their characters and abilities from this. Alu becomes a case study for Balram. Balram applies his instrument for

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Factors Affecting Operational Efficiency Of Selected Banks In India: A General Review

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ABSTRACT

Over the past several years, substantial research efforts have gone into measuring the efficiency of commercial banks. After nationalization of banks, there was a growing concern on the deteriorating of banking sector's efficiency in several spheres. An academic study on the performance of the nationalized banking sector in India is very important and pertinent in the context of its structural existence. Before taking up such an exercise, an attempt is made in this section to present a review of the available studies in the relevant area of banking. The research studies conducted in the field of banking in India and abroad relate mostly to institutional, functional and developmental activities of banks.

Key words: Efficiency, Nationalization, Structural, exercise, substantial, commercial, pertinent.

1. INTRODUCTION

Finance and banking is the life blood of trade, commerce and industry. Now-a days, banking sector acts as the backbone of modern business. Development of any country mainly depends upon the banking system. A bank is a financial institution which deals with deposits and advances and other related services. It receives money from those who want to save in the form of deposits and it lends money to those who need it. The banking is one of the most

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Effectiveness of Yield Measures on Performance and Profitability of Selected Banks in India

V. Mouneswari, Rajesh Mamilla, T. Narayana Reddy

Abstract: ***Productivity is one of the important measures which helps for growth and development of economy of the country. The productivity plays a crucial part in organizational achievement of excellence which is essential for dynamic society. Optimum productivity of a company depends on coordination between all inputs that yield maximum profitability with minimum effort. Hence the present study is focus on an objective of identify and compare the factors influencing the Productivity as well as Profitability Performance of select Public and Private sector banks in India. The sample consists of 20 Banks which were operating in India. The study period considered for the study is ten years from 2008-09 to 2017-18. The methodology which is used in the present study is Correlation analysis which helps to know the relationship between the select variables and Regression analysis is used to analyse the impact of select independent variables such as Sales Per employee, value added per employee, Profit before tax per employee, employee cost to sales and employee cost to value added on dependent variables like Return on Assets, Return on Equity and Value added per fixed assets. Further Independent sample test is used to assess the relationship between Productivity and Performance measures of select Public and Private sector Banks in India. Thus, the results from correlation analysis indicate that almost all the independent variables except Sales per employee and employee cost to sales have significant relationship with dependant variables in both Public sector and private sector banks. The Regression result shows that Sales per employee is having significant negative impact on Return on Assets, return on equity and Value added per fixed assets. Independent samples test reveals that the Private sector banks are showing superior performance than Public sector banks.***

Keywords: Correlation, Private Sector, Productivity, Optimum, Independent, Dependent.

I. INTRODUCTION

The banking system plays an important role to the economic development and growth of the country.

Growth in Banks productivity is very important for the effective functioning of the various societal activities. Finance acts as a catalyst to the enhancement of the country's economic condition. There is necessity to meet the growth in finance and required to strengthen the banks productivity and their performance. Banking activities and its performance hold the attention in a nation's economy.

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The role of finance for the economic development of a country has identified and it forms the essential of the money market in economy. Over the past few decades, more focus has been put on financial institutions especially on commercial banks in analysing both productivity and performance. Thus, keeping in view the importance of banking sector reforms and Basel Accords, the present study aimed to analyze the relative factors affecting both productivity and Profitability performance of selected public and private sector banks from the year 2008-09 to 2017-18. The present study aims at an analysis of banks productivity using the ratios Sales per employee, value added per employee, Profit before tax per employee, employee cost to sales, Employee cost to value added and Performance measures like return on assets, return on equity and value added per fixed assets.

II. REVIEW OF LITERATURE

Amanjot Kaur Sodhi & Simran Waraic(2016) estimates the performance of selected public and private sector banks in India. They will study and compare the various aspects of the performance of selected public and private sector banks in India. The study reveals that Private sector banks are performing well than public sector banks. This study has suggested that more emphasis is on the consumer service which will increase the customer confidence.

Brajesh Kumar (2016)assesses the productivity of both Indian and Nepalese workers in commercial sector commercial banks in two economic parameters, one in business and employee work from five years to 2009-10 to 2013-14. Compare Nepalese banks for business one worker and India's growth rates are high, but each worker is low in Indian banks. The relationship between businesses is one employee and the profit of every employee of Bank of Indiana shows moderate quality while Nepal bank shows the highest quality.

Amit Kumar Singh (2015) his research analyzed the profitability position of private banks in India. The survey reveals that the selected private sector banks got a huge response in terms of service and quality banking.

Cheenu Goel, Rekhi (2013) conducted a study in comparison of selected public and private sectors in India during the period of 2009-2012. Analysis shows that the public sector banks are less profitable compare to private banks. As per his analysis the performance of bank depends on return on assets, return on equity and net interest margin.

Virender Koundal (2012) analyzes the Performance of banks in India through the financial system of India.

For this study he considered public, private and foreign sector banks. Here, foreign banks are more efficient banks then new banks after old banks and at last Public sector banks.

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An Impact of Operating and Non-Operating Expenses on Financial Viability in Jet Airways

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Abstract – 'Crisis' – the result of insolvency and bankruptcy situation for a firm or nation. The reasons for a crisis of a firm are internal and external environmental facts to which the firm couldnot understand thoroughly. During the crisis the shareholders blame the firm's policies, procedures and administrative strategies. The banks show reluctance not only to the firms but also to their linkages also. In the present paper a detailed study has been carried out about the crisis in Jet Airways. For the purpose descriptive study has been chosen to know the root cause which damaged the harmonic functioning of the company. The results have disclosing that pre-emptive actions must be taken by the firms to absorb corporate government policies perfectly. It is the primary responsibility in front of the Governments to involve in internal activities of the corporate firms and the policies should be made by makers in such a way only.

Key words – financial crisis, insolvency, bankruptcy, financial ratios

I. INTRODUCTION

Jet Airways was incorporated in the year 1992 as a private company as per the companies act 1956. Jet Airways has converted in to a public company in the year 2005. Currently Jet Airways provide regular scheduled services to 42 destinations in India and two destinations outside India, operating 1,924 flights weekly. Their aircraft fleet has grown from four aircraft in 1993 to currently 42 aircraft comprising 34 Boeing 737 aircraft and eight ATR 72-500 aircraft.[1]

Current Status of Jet Airways [2]

In the year 2018, Jet Airways has announced huge losses. In March 2019, it was noticed that nearby 1/4th of total Jet Airways fleet were stopped due to insolvency of lease rents. On 5th April 2019, Indian Oil has taken the decision to not to supply oil due to huge unpaid debt.On 10 April 2019, an aircraft was seized at Amsterdam Airport by a European cargo-services provider over non-payment of dues.

On 12th April 2019, Jet Airways has announced that it will be going to stop all international flights due to the lack of free available aircrafts

As a result, on 17 June, after getting no acceptable offers from Etihad Airways and Hinduja Group, lenders to Jet Airways decided to refer the company to National Company Law Tribunal (NCLT) for bankruptcy proceedings with a debt pile of $1.2 billion.

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Objectives of the study

To study the internal financial mechanism that has directed the financial crisis in Jet Airways.

Period of the study

2003-04 to 2007-08 & 2013-14 to 2017-18 (15 years)

II. REVIEW OF LITERATURE

Zhouying Jin and **Ying Bai** have stated that there is no exact meaning for financial crisis but the current status of each system fell into the crisis of development paradigm.From their voice, it can be noticed that the financial crisis can be avoided by value transformation from top end to down end continuously and it is a continuous process. The second tool to control the financial crisis is usage of soft technologies rather than hard technologies. The third one is green business strategy. It means that fair deals with long lasting nature.[3]

John Loxley has stated that the main reason for the global crisis is disagreed monetary and fiscal policies between the countries. The financial crisis can be mainly appeared in the form of lowering the debt transferring between nations, firms and individuals. He has highlighted the role of government, central bank to reduce the interest rates for better crisis management and to bring back the debt proportion flow in the market.[4]

Bernd Braasch has pointed out about one of the main reasons for a financial crisis. In his observation has given the importance to information gaps between information generator, provider and needed endpoints. Actual situations are always not appearing to those who are needed as with their real status. A systematic framework is needed to avoid crisis to facilitate the information and warning point to alert the nations and firms.[5]

Reinout D.Vriesendorpand **Martin A Gramatikov** have given some valuable suggestions to avoid financial crisis. They are - first the firm/country needs to reduce cheap and high liquid financial resources. The policies of financing for restructuring should be more relaxed in crisis baring economies.[6]

Benjamin Dennis and **Simon Kandel** have stated that while corporate restructuring high interest rates are more favourable even to the banks and the firms before crisis. After crisis some important measure are to be applied to overcome from the threat of financial crisis. They are wide spread debt forgiveness policy, enhanced bankruptcy court and enlarged free market rivalry.[7]

Robert W. Rouse have stated that the two main reasons for financial crisis are failure to adopt right corporate governance policies and lack of information transparency.

A Study on Cash Flow Statement Towards Groma Infrastructure Limited Hyderabad

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Abstract: In the developing world the many firms which has been opened but there are only few firms which is able to with stand. Few firms has more assets and less cash and vice versa (i.e, the working capital will be in a good position) but they will not be able to pay the tax, repay the depth and soon, due to fact that the cash at hands or liquid assets will not be available forth at firm. So, to avoid this situation the cash flow system is introduced which gives the idea of how to use the working capital in such a way so that the firm will not meet with the in adequacy of the cash. Based on the cash flow statement a firm can forecast it's profit for the forth coming periods (days, months and next year). This research paper concludes that the cash flow statement is not similar to the income statement but it can be used as a source for computing the cash flow statement.

Keywords*: Cash flow, Liquid Assets, Forecasting the profit, Assets and shareholder etc.*

I. INTRODUCTION

The cash flow is also known as Statement of Accounting for Variation in Cash and Secondary Data. The cash flow statement studies about to the movement of the working capital funds (includes cash and noncash things like assets, liability, etc) like cash inflow (income of the cash) and cash out flow (usage of the money).

The cash flow statement is based on the funds but not in a deeper manner as compared to funds flow statement. Thus, the cash flow statement gives the overall picture of the financial position of the firm based on the cash like cash owed to pay for creditors, bank loan, taxes and dividend for shares, etc and revenue of the firm. The cash flow statement is applicable for the short term financial planning and it is void in the long term financial planning. The concept of cash basis accounting is applied in the cash flow statement. The cash flow statement can be prepared based on the balance sheet of the starting and ending period, the income statement and some additional data which includes the transactions which is not included in the books.

From a financial point of view a firm basically generates cash and spends cash. It generates cash when it issues securities, raises bank loans, sells products, disposes an asset, and so on forth. It spends cash when it redeems securities, pays interest and dividend. Purchase material, acquires an asset etc. The activities that generate cash are called sources of cash and the activities that absorb cash are called uses of cash. The ratio analysis is one of the most powerful tools of financial analysis. It is used as a device to analyze and interpret the financial health of enterprise. With the help of ratios that the financial statement can be analyzed more clearly and decisions made from such analysis. Financial analysis is the process of identifying the financial strengths and weakness of the firm properly establishing relationship between the items of balance sheet and the profit and loss account. There are various methods or techniques used in analyzing financial statements. By the use of ratio analysis one can measure the financial condition of a firm and can point out whether the conditions is strong, good, questionable or poor. Analysis and of financial statement with the help of ratio is termed as ratio analysis.

An examination of a company's cash inflows and out flows during a specific period the analysis begins with a starting and generates ending balance after accounting for all cash receipts and paid expenses during the period expenses during the period. The cash flow analysis financial reporting purpose. Before getting into the nuts and bolts of a statement of cash flow, let's take a brief look at how this document has evolved over the years.

Originally, businesses were required to file a statement of changes in financial position, or funds statement. The funds statement went through several years of development before it was widely used. In 1961, Accounting Research Study No. 2, sponsored by the American Institute of Certified Public Accountants (AICPA), recommended that a funds statement be included with the income statement and balance sheet in annual report to shareholders. Two years later, Accounting Principles Board (APB) Opinion No.3 was issued and provided funds statement preparation guidelines. Although Option No.3 did not go so far as to make the funds statement mandatory, most businesses , aware of the statement's valve, included it in their annual reports anyway. Finally in 1971, APB Option No. 19 officially made the funds statement one of the three primary financial documents required in annual reports to shareholders. The APB also said a fund statement must be covered by the auditor's report. Because Option No.

From Inclusion to Empowerment: The Implications of Microcredit

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Abstract--- Microfinance in developing countries is playing a crucial role with regard to financial inclusion of poor, economic growth and poverty eradication. This paper focused on analyzing the demographic factors, various dimensions related to Women empowerment and the access of microcredit on women empowerment through a thorough study of selected self help group members.350 respondents were selected for the study by using convenience sampling method. A well defined structured questionnaire is used to collect the data and statistical tools like factor analysis, multiple regressions and correlation analysis were used to analyze the questionnaire. It is found that women empowerment is influenced by the help of microcredit. It is concluded that microcredit created strong impression in the minds of women and driven the growth of women by building confidence.

Keywords--- Microcredit, Women Empowerment, Poverty, Self Help Groups, Confidence.

I. Introduction

Microcredit is a part of microfinance and an extension of very small loans called micro loans to improve borrowers who lack collateral, steady employment and verifiable credit history. It provides financial services especially to the poor people and also to the illiterates'. It is a technique that helps in reducing poverty in developing countries.

It is a program that provides credit for business services and self employment for the poor people. Giving loan to women became an important principle in microcredit.

Women in rural areas suffer with deplorable socio-economic conditions and this prevents them access to proper education.

Lack of knowledge to poor women often results in making women to face so many struggles. The constitution of India is providing equal status to the women.

Women in rural areas face discrimination in family and society as they are deprived of their rights in property, education and other aspects of life. Financial empowerment is a dimension that helps in the growth and sustainability of women in various aspects of life. Empowerment of women through microcredit is the most influencing aspects in the present day scenario.

II. Review of Literature

Kamal Bel Hadj Miled(2015) explored that microfinance brought positive impact in the life of clients, boost the ability of poor individuals to improve their consumption level, health e.t.c. The relationship between MF and poverty is still in question and the author explores the new empirical evidences on poverty reducing effects of microfinance.

The analysis is based on cross sectional data covering 596 MFI's in 40 developing countries for 2011. The cross sectional data are supplemented by a two period panel data of 57 developing countries. It is found from the econometric results consistency confirm that MF loans per capita are significantly and negatively associated with poverty head count ration and positively and significantly associated with the expenditure of consumption.

M.Aruna and Rema Jyothirmayi (2011) explored that microfinance programs are treated as a key strategy in addressing development issues across nations since the last three decades. For this a primary survey has been carried out to capture the realistic experience and observation from the beneficiaries.

They used t-test to confirm the difference between change in income, savings and loan availability before and after joining the self help groups.

The authors found that there is positive change with income. Microfinance activities and self help group participation has a positive impact on income, assets savings and bank connectivity.

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Growth and Development of Financial Derivatives in India

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Abstract

The innovative practices always catch-up the eyes of concerned people where ideas and innovation become the hallmark of progress. And even capital market is no far away from this, whereas financial derivatives have given drastic change in the growth of the financial market. Risk is a characteristic feature of most commodity and capital markets. Variations in the prices of agricultural and non-agricultural commodities are induced, over time, by demand-supply dynamics. The emergence of derivatives market is an ingenious feat of financial engineering that provides an effective and less costly solution to the problem of risk that is embedded in the price unpredictability of the underlying asset. In India, the emergence and growth of derivatives market is relatively a recent phenomenon. The present study encompasses in its scope an analysis of historical roots of derivative trading, types of derivative products, regulation and policy developments, trend and growth, future prospects and challenges of derivative market in India. There is an increasing sense that the derivatives market is playing a major role in shaping growth of capital market.

Keywords: Capital market, Derivatives, Forward, Futures, Options, Equity, Hedging and Turnover**.**

1. Introduction

The emergence of the market for derivatives products, most notably forwards, futures and options, can be tracked back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Through the use of derivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative product minimizes the impact of fluctuations in asset prices on the profitability and cash flow situation of risk-averse investors.

Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be bullion, index, share, bonds, currency, interest, etc.. Banks, Securities firms, companies and investors to hedge risks, to gain access to cheaper money and to make profit, use derivatives. Derivatives are likely to grow even at a faster rate in future. The objective of an investment decision is to get required rate of return with minimum risk. To achieve this objective, various instruments, practices and strategies have been devised and developed in the recent past. With the opening of boundaries for international trade and business, the world trade gained momentum in the last decade, the world has entered into a new phase of global integration and liberalisation. The integration of capital markets world-wide has given rise to increased financial risk with the frequent changes in the interest rates, currency exchange rate and stock prices. To overcome the risk arising out of these fluctuating variables and increased dependence of capital markets of one set of countries to the others, risk management practices have also been reshaped by inventing such instruments as can mitigate the risk element. These new popular instruments are known as financial derivatives which,

AN EMPIRICAL STUDY ON MUTUAL FUND PERFORMANCE WITH REFERENCE TO SBI ASSOCIATE BANKS

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Abstract

The role of Indian mutual fund industry as significant financial service in financial market has really been noteworthy. In fact, the mutual fund industry has emerged as an important segment of financial market of India, especially in channelizing the savings of millions of individuals into the investment in equity and debt instruments. Mutual funds are seemingly the easiest and the least stressful way to invest in the stock market. Quiet a large amount of money has been invested in mutual funds during the past few years. Any investor would like to invest in a reputed Mutual Fund organization. Mutual Funds have emerged as an important financial intermediary globally, particularly in India where retail investors represent 97.7% of the 4.70 crore investor accounts. Mutual Funds protect the interest of the small investors not only from the downside market risk through the diversification of risks, but also provide the benefits from the upward market returns. It also plays a key role in the inflow of capital to the financial market. The present paper studies the evolution of mutual funds in India and the growth trend of the mutual funds industry in India.

***Key Words*:** Financial Innovations, Sharpe's ratio, Average Maturity, Expense ratio, and Treynor's ratio.

INTRODUCTION:

In fact, the mutual fund industry has emerged as an important segment of financial market of India, especially in channelizing the savings of millions of individuals into the investment in equity and debt instruments. Mutual funds are financial intermediaries concerned with mobilizing savings of those who have surplus and the canalization of these savings in those avenues where there is a demand for funds. The indian financial system based on four basic components like Financial Market, Financial Institutions, Financial Service, Financial Instruments. All are play an important role for smooth activities of the transfer of funds and allocation of the funds. The main aim of the Indian Financial System is that contributing efficiently services to the capital market. The Indian capital market has been growing tremendously during the second generation reforms. The first generation reform was established in 1991 with the concept of LPG.

Then after 1997 second generation reform was established,still it's going on, includes reforms of industrial investment,fiscal policy,ex-imp policy,public sector,financial sector,foreign investment through the institutional investors,banking sectors.

The spared of banking system has been a major factor in improve financial intermediation in the economy and in the growth of financial savings with progressive liberalization of economic policies ,there has been a rapid growth of capital market,money market and financial services industry including merchant banking,leasing and venture capital,hire purchasing.Compatible with the growth of financial sector and second generation reforms its need to fulfillment of the financial sector.

The main vision for the analysis of this study is to inspect the performance of five star rated mutual funds,given weight of risk,return,and assets under management, net assets value,book value and price earnings ratio.

What is a Mutual Fund?

Mutual fund is a pool of the money, based on trust who invests the savings of a number of investors who contributes a common financial goal, like capital appreciation and dividend earning.The money thus collect is then invested in capital market instruments such as shares, debentures, and foreign market.Investors invest money and get the units as per the unit value which we called as NAV (net assets value).Mutual fund is the most suitable investment for a common man as it offers an favourable to invest in diversified portfolio management, good research team, professionally managed Indian stock as well as the foreign market.The main aim of fund manager is to taking a security that have under value and future will rising, then fund manager sell out of stock.Fund manager focused on risk-return trade off, where minimize the risk and maximize the return through diversification of the portfolio.The most common features of mutual fund unit are low cost.The below mentioned how the transactions will done on mutual fund.

***Types of mutual funds*:**

Investment companies basically are of two types. They are:

1. Closed-end Investment Companies
2. Open-end Investment Companies

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Health Monitoring Systems by using IOT Devices in the Real time Environment

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Abstract: At the same time, managing health and work has become a matter of concern for most individuals in this fast-pace globe. There are well recognized problems of long waiting times in hospitals or outpatient tracking. The problem needs a health surveillance scheme that can seamlessly monitor daily health parameters and track the heart rate and report them to the individual involved through the GSM module. Different surveillance systems have developed with advances in technology and made it easy for people. This article describes present health research and development. Different systems introduced to define the missing regions and what can be achieved to achieve a better output than present scenario systems have been compared and assessed.
Key words: IOT, Health surveillance, GSM, Sensor, Bluetooth.

I. Introduction

An efficient way to assess the health situation of every person is through the health surveillance scheme. It helps to monitor anywhere at any time. Health surveillance is a helpful field of studies for every single person to review fundamental routine health parameters and can also be used to monitor cardiac rates. It is a great way to reach the state of the body at any moment, rather than spend time on booking all appointments, and then wait for the doctor's office. The information preloaded will also save the time since critical cases can be reviewed rather than a routine checks at the clinic. This document discusses the different health parameters, examines and analyzes all current equipment, and plans our strategy to creating an apparatus that simultaneously satisfies the inconveniences of current devices.

II. Architecture and Its Devices

Figure 1 presents a general diagram which visualizes a health surveillance scheme.

A. Health Monitoring Of Systems Incorporate With The Gsm

In cardiovascular surveillance systems GSM modules have been integrated. The system basically checks and transmits information that the sensors collect to the microcontroller, where it is transmitted by the microcontroller over the air using GSM technology. The sender communicates the data to the individuals involved as a SMS. The SMS shall state the urgency accordingly if the situation worsens.

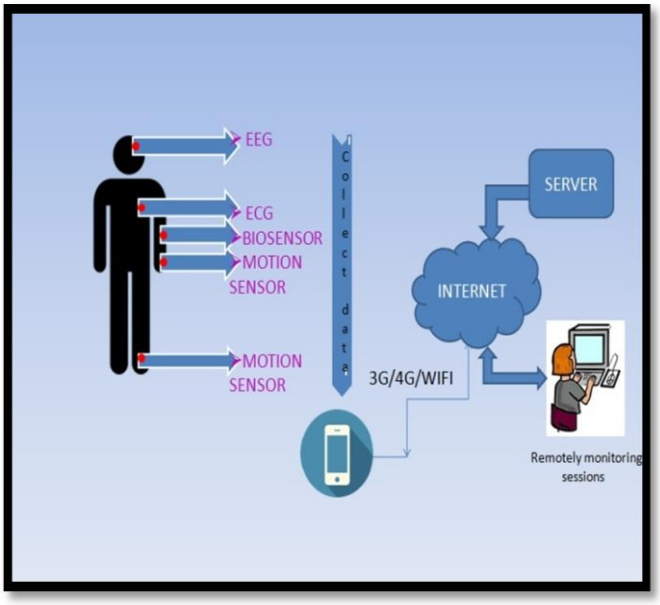

Figure 1: IOT - basing health surveillance visualization.

B. Health Monitoring Of Systems Which Incorporated With The Bluetooth

Mainly Bluetooth systems were suggested for the detection of Alzheimer's disease. Various access points can be put anywhere so that the individual is linked by the highest signal obtained from the point of access to the device. The motion of the patient database allows and tracks the device with Bluetooth and transmits the motion identification software to the individual consenting to monitor the database to detect whether the individual is affected by Alzheimer's disease or not.

C. Health Monitoring Of Systems Which Incorporated With Mobiles Phones

The creation of IMHMS can help anyone track their health and the problems involved. The related individual will be able to understand the medical feedback from the information gathered by the bio sensors through this scheme. Since mobile telephones are an significant component of our lives, they can seamlessly incorporate several health facilities.

D. Health Monitoring Of The Existing Hardware Equipments

The earlier used hardware for surveillance are:-

1. Optical sensor unit: the transmitter would transmit infraround waves and a photo sensor would be mounted

Mobility Pattern Probing of Mobile Users using Call Data Record Dataset

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Abstract*: Colossal measures of information are currently being gathered because of the expanded use of portable media communications. The aims of the mobile phone clients can't be watched, their expectations are reflected in the call information which characterize use designs. Over some undefined time, frame, an individual telephone produces an enormous example of utilization. In this paper, we examine the solo learning possibilities of two neural systems for the profiling of brings made by clients over a time allotment in a versatile media transmission arrange. Our inquest gives a similar examination to client call information records so as to direct a clear information mining on clients call designs. Our examination demonstrates the preparation capacity of the two systems to segregate client call designs. The arranged highlights can later be deciphered and marked dependent on explicit necessities of the versatile specialist organization. Along these lines, suspicious call practices are separated inside the portable media transmission organize. We give results utilizing covered call information from a genuine portable media transmission arranges.

Keywords* : *Time Series Analysis; Mobile Call patterns; Network Traffic; Data Centers.

I. INTRODUCTION

Tremendous degrees of information are progressively being gathered and warehoused because of expanded use of versatile correspondence administrations. Understanding data and information delivered from these databases can give administrators a focused edge. A Call Data Record (CDR) is accomplished for each finished bring in a convenient media transmission arrange. These information records are alluded to as the heading of the call. The bearing contains an abundance of insights concerning the call made by a supporter. Other than their charging job, the heading of the call establishes a colossal database inside which other helpful comprehension of guests could be extricated. One model is the recognition of odd utilization of the portable media transmission organizes. Albeit numerous other CDR-like administrations exist where abnormal use could be distinguished. In particular, this hustle is established accessible as needs be information record for prepaid administration supporters from a genuine portable media transmission organize. The in-formation set contains 500 covered supporters, each with calling information for a time of a month. Over a time, allotment, an individual handset's Subscriber Identity Module (SIM) card produces a major example of utilization. The ex-ample of utilization may incorporate global calls and time-fluctuating call designs among others. Bizarre use could be recognized inside the whole example such as endorser's maltreatment of free call administrations such as crisis administrations.

II. CALL DETAIL RECORD

Call detail record data contains fundamental insights concerning cell phone utilization, for example, which portable frameworks the guest and individual phones were associated with during the season of the choice, the personalities of sources (purposes of cause), the characters of areas (end focuses), the length of each call, the complete utilization time. If there should arise an occurrence of pinpointing people, the operator comprehends portable pinnacle areas and it is conceivable to utilize CDRs to unpleasant the spot of similarly parties. The space of portable frameworks, and in this manner the dependability in deciding guest site, varies as per evaluated traffic and landscape. Versatile frameworks are for the most part divided a few km separated in rustic spots and 400 to 800m separated in thickly populated zones. The data is staggeringly useful for helpful and advance applications.

Bizarre use might be recognized as having a place with one of the two sorts: -

The example is naturally deceitful; it will never happen in typical use. This sort isn't too hard to even think about detecting. The example is irregular just in respect to the chronicled example set up for that telephone. To have the option to identify the example of the second kind, it is important to have comprehension of the historical backdrop of SIM utilization. Subsequently, a clear hearing of the call profiling for each supporter can be utilized for learning extraction. Interpretation through bunching or gathering of comparable examples can help in confining suspicious call conduct inside the mobile media transmission arranges. This will likewise help in their further examination and call design pike of subscribers. Because of the colossal call volumes, it is for all intents and purposes difficult to examinations without modern procedures and devices. So, there is significance of procedures and instruments to shrewdly help people in investigating enormous volumes of calls. One specific procedure is unaided learning.

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