IDENTIFICATION AND DELINEATION OF GROUND WATER POTENTIAL ZONES IN AND AROUND RAJAMPET BY USING REMOTE SENSING AND GIS TECHNIQUES

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Abstract : Groundwater is an important resource contributing significantly in total annual supply. However, overexploitation has depleted groundwater availability considerably and also led to land subsidence at some places. Assessing the potential zone of groundwater recharge is extremely important for the protection of water quality and the management of groundwater systems. Groundwater potential zones are demarked with the help of remote sensing and Geographic Information System (GIS) techniques. In this study a standard methodology is proposed to determine groundwater potential using integration of RS & GIS technique The composite map is generated using GIS tools. The accurate information to obtain the parameters that can be considered for identifying the groundwater potential zone such as geology, slope, drainage density, land use and land cover are generated using the satellite data and survey of India (SOI) toposheets of scale 1:50000. It is then integrated with weighted overlay in ArcGIS. Suitable ranks are assigned for each category of these parameters. For the various units, weight factors are decided based on their capability to store groundwater. The groundwater potential zones are classified into five categories like very poor, poor, moderate, good & excellent. The use of suggested methodology is demonstrated for a selected study area in and around Rajampet in Kadapa district. This groundwater potential information will be useful for effective identification of suitable locations for extraction of water, for sustainable usage of ground water.

Index Terms Ground water potential zones, ArcGIS, IRS, DEM, Toposheets, Thematic maps.

I. INTRODUCTION

1.1. GENERAL.

Nature has bestowed mankind with many gifts. Amongst all of them ground water is the paramount one. Some of the gifts are non-replenishable, whereas the ground water can be considered as a partly replenishable one. If the monsoon is of considerable magnitude, the ground water gets recharged indicating the partly replenish able nature of the gift. Judicious balance should be maintained between the exploitation and recharge. However, exploitation of the groundwater has increased to a higher degree, resulting in the over exploitation that in turn leads to an environmental problem. Hence, a thorough knowledge of the nature of occurrence of the groundwater is essential to avoid such a baffling situation where man has to look up for the help. However, man has to depend on ground water as the surface water is not sufficient for all his activities.

Groundwater is a precious and the most widely distributed resource of the earth and unlike any other mineral resource, it gets its annual replenishment from the meteoric precipitation. The world's total water resources are estimated at 1.37 X 10^9 M Ha m. Of the global water resources, about 97.2% is salt water mainly in oceans, and only 2.8% is available as fresh water at any time on its ground earth. Out of this 2.8%, about 2.2% is available as surface water and 0.6% as groundwater. Even out of this 2.8% of surface water 2.15% is fresh water in glaciers and icecaps and only 0.01% is available as lakes and reservoirs, and 0.0001% in streams, the remaining being in other forms 0.001% as water vapour in atmosphere and 0.005% as soil moisture in the top 0.05m

CALCULATIONOF NATURAL FREQUENCIES OF MDOF SYSTEM

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ABSTRACT

This paper deals with the calculation of natural frequency of the multi-degree of freedom system, for calculating natural frequency of system by manual is simple for Two-Degree of freedom system, Three-Degree of freedom system and there after it becomes strenuous, so in this we have used MATLAB programming since MATLAB is a multi-paradigm numerical computing environment and proprietary "programming" language. MATLAB stores the data in the matrices and allows matrix manipulations MATLAB stores the data in the matrix form so it is very convenient to use the software. There are many approximate methods in these Stodola, Dunkerley, Rayleigh, Holzer and Influencecoefficient methods are considered and have calculated the natural frequency of the system by using the MATLAB. In this we can calculate the natural frequency of the system for Multi-Degree of freedom System.

Keywords: Multi-degree of freedom, Natural frequency, MATLAB.

INTRODUCTION:

Vibrations have become essential topics for assuring structural integrity and operational functionality in different engineering areas. Vibration is a mechanical phenomenon whereby oscillations occur about an equilibrium point. The word comes from Latin *vibrationem* ("shaking, brandishing"). The oscillations may be periodic, such as the motion of a pendulum or random. Vibration can be desirable: for example, the motion of a tuning fork, the reed in a woodwind instrument or harmonica, a mobile phone, or the cone of a loudspeaker.

In many cases, however, vibration is undesirable, wasting energy and creating unwanted disturbance. For example, the vibrational motions of engines, electric motors, or any mechanical device in operation are typically unwanted. Such vibrations could be caused by imbalances in the rotating parts, uneven friction, or the meshing of gear teeth. Careful designs usually minimize unwanted vibrations. Similarly vibration will be developed in structures which due to so many reasons. For understanding these vibration in structure we need done the analysis on the structure

Structural analysis is mainly concerned with finding out the behavior of a physical structure when subjected to force. This action can be in the form of load due to the weight of things such as people, furniture, wind, snow, etc. or some other kind of excitation such as an earthquake, shaking of the ground due to a blast nearby, etc. In essence all these loads are dynamic, including the self-weight of the structure because at some point in time these loads were not

Experimental Investigation on Portland Pozzolana Cement Concrete by Partial Replacement of Fine Aggregate with Ceramic Waste and Quarry Dust

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Abstract- **This paper presents the effect of mix proportions had been determined for M40 grade concrete as consistent with the guide traces given in IS 10626- 2009. In the present investigation fine aggregate has been replaced with unique chances of ceramic waste i.e.,via 0%.10%,15%,20%, and 25%and Quarry dust via 0%.10%,15%,20%, and 25% mixture of each substances. For examine of diverse residences, concrete specimens have been examined. Constant water-cement ratio of 0.4 has been adopted. The experimental investigation began with selection of substances and followed by means of their trying out, casting of specimens and curing eventually by means of testing of specimens.**

Index Terms- **Ceramic waste, Quarry dust, PPC, Mechanical properties**

I. INTRODUCTION

Concrete is a composite material which is predominantly used all over the world. It is obtained by mixing cementing materials, aggregates and water in required quantities. The word concrete" is originates from the Latin verb "concretus" which means to grow together. The concrete has three basic components which are cement, fine and coarse aggregate. In these components only cement is manufactured and both fine and coarse aggregate has been obtained naturally. This has brought up with a great destruction to the environment. And further the disposal of the huge amount of demolition waste was another problem. To solve both these problems use of waste materials such as concrete waste, rice husk, pond ash, quarry waste, marble waste and ceramic waste etc if are dumped in open ground is hazardous to environment. These materials have also benefits that these materials are easily available and economical. In this research ceramic waste and quarry dust are used in sand.

II MATERIALS AND METHODS

Materials

There are many types of concrete available , created by varying the proportions of the main ingredients below. In this way or by substitution for the cementitious and aggregate phases, the

Finished product can be tailored to its application with varying strength, density or chemical and thermal resistance properties.

2.1. Cement :

Portland Pozzalona cement of 53 grade manufactured by Zuari cement company confirmed IS:1489 -1 (1991) is used. The various properties of materials such as cement sand, fine aggregate, coarse aggregate, ceramic waste, & quarry dust.

Table No.1Pysical properties of materials

Materials	Properties
Cement	Specific Gravity-2.89 Normal consistency-29% Initial Setting-30 min Final Setting -5 hours
Coarse aggregate	Specific Gravity-2.6 Fineness modulus -7.86
Fine Aggregate	Specific Gravity-2.65 Fineness modulus -2.74

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A Study on Strength Comparison of Self-curing Concrete with Replacement of Fly Ash

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ABSTRACT

Curing of concrete is defined as providing satisfactory moisture content in concrete during it's early ages in order to develop the desired properties of Concrete. Self-curing Concrete is one type of modern concrete, which cure itself by retaining moisture content. And the concept of self-curing will reduce the evaporation of water from Concrete. Concrete is most widely used construction material due to it's good compressive strength and durability. Depending upon the nature of work the cement, fine aggregate, coarse aggregate and water are mixed in specific proportions to produce plain concrete. Plain concrete needs congenial atmosphere by providing moisture for a minimum period of 28 days for good hydration and to attain desired strength. The strength and durability of concrete depends on curing. The cement hydration problem due to improper curing, which can be successfully overcome by using self-curing concrete. Hence no traditional way of Curing is required in self-curing concrete. Self-curing concrete can be used where curing is a constraint because of inadequacy of water, fluoride content in water which affects concrete charecterstics and where structures cannot be accessed for curing. In conventional curing this is achieved by external supply of water after mixing, placing and finishing of concrete. In practice, conventional type of Curing is difficult to perform as it shall need a large amount of water, meanwhile scarcity of potable water increases day by day. In order to overcome that problem as well as achieve curing. In the experiment replacement of fly ash in cement with 10%,15%,20%,and 25%. It is found that replacement of fly ash by 20% gives more strength and durability when compared to other percentages. The present study self-curing agents such as polyethylene Glycol (PEG) and super absorbent polymer (SAP) are used individually with fly ash in concrete. That self-curing is helps in better hydration and strength. Effect of these agents on strength properties of concrete such as Compressive strength, split tensile strength and flexural strengths are studied. And grade of concrete is M30 is used in this work. The main aim of this work is to study the mechanical properties of concrete with SAP&PEG. M30 grade of concrete is considered as reference mix and strength properties of reference mix are determined. The use of self-curing agents percentages of PEG (1%,1.5%,2%,2.5%) and SAP (0.2%,0.3%,0.4&0.5%) by weight of cement are added separately in the reference mix. Finally strength properties are studied and compared to normal concrete.

Keywords: Polyethylene Glycol, Super Absorbent Polymer, Flyash, Compressive Strength, Split Tensile Strength, Flexural Strength.

BEHAVIOUR OF CONCRETE ON MECHANICAL AND DURABILITY PROPERTIES BY REPLACING BRICK POWDER WITH CEMENT

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Abstract – The development and usage of concrete as a construction material has been greatly increase and widely accepted all over the world. The most important parameters in concrete that should be considered are workability, strength and durability.by adding pozzolans and cementitious filler materials, strength and durability of concrete can be improved. Even through it cause in reduction of workability and it brings up the need of superplasticizer or w/c ratio more than 0.4, they have been used widely over the past decades. There are lots of known materials which act as pozzolans, and many researchers tried new materials for cement replacement to test their effect on the concrete. Properties of the concrete can be improved by finding the best combination and percentage of cement for these materials in fresh and hardened states.In the experimental study, the effect of replacing cement by brick powder can be known by a coinbination of them with three different percentage of replacement (5%,10%,15%) for M30 grade on fresh and hardened states of concrete. Through this investigation we will come to be known how these replacement materials will attain strength and durability. At the end by testing the sample the optimum combination figured out by comparing the mixes with the plain sample, which sample attains maximum strength and durability properties through cement replacement. many experiments has been done in this investigation ,such as compressive strength, splitting tensile strength, depth of penetration (Water permeability Test) Rapid Chloride Ion Permeability Test (RCPT).

Index Terms—Brick Powder, Cement (OPC), Coarse Aggregate, Fine Aggregate,X-ray Diffraction, Concrete.

I. INTRODUCTION

Concrete is a mixture of aggregates, cement and water. Due to high development of need with structures concrete is using widely in construction industry. Maximum strength of concrete depends on Aggregate and 65% volume of concrete is occupied by aggregate and remaining by cement and water. Cement is the most consuming material in the world due to the high growth in development. Concrete had been widely used in construction field due to the ability of bearing strength and having good durability. Due to increase in need for society with construction concrete has to be widely used ,during this process the utility of resources gets reduced .so that it is a mandatory thing to replace cement with suitible material in order to reduce the usage of huge amount of cement as well as to reduce cost, and also keeping in mind about the waste disposal in construction industry the proposal of replacement of brick waste in cement has developed. Waste clay brick (WCB) is silicate strong waste, its reusing has awesome ecological and social hugeness. The use of WCB as recyclable bond, has been quickly presented. The accompanying viewpoints were accentuated that the effect of WCB as supplementary cementitious material on physical mechanics, twisting and sturdiness of cementitious materials. By the replacement of waste clay brick in cement partically there been a positive results at certain percentage but after the increase in percentage of supplymentry material there been reduction of strength due to chemical reaction components that are present in the brickpowder and cement.Over the most recent five decades, at any rate in excess of 20 billion cubic meters of mud block items have been delivered in world, which will for the most part be changed into strong waste in the following five decades In the experiment point of view brick is collected from demolished building and crushed as fine powder (passing from 90micron sieve) and been used as partial replacement of cement up to (5%,10%,15%) and the tests like compressive strength , tensile strength, rapid chloride ion permeability test and water permeability test had done by curing it for 7days, 14days, 28days, 56days, 90 days.

II. RAW MATERIALS

A.CEMENT:

Cement is a powder substance made by calcareous, Argillicious, Siliceous materials by heating in a clinker at about 1450^{0}C , then grinding in to a fine powder with a small addition of gypsum . Portland cement is the most common type of cement. Colour

AN EXPERIMENTAL INVESTIGATION ON MECHANICAL PROPERTIES OF CONCRETE BY PARTIAL REPLACEMENT OF QUARTZ POWDER AND CRIMPED FIBERS.

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Abstract : The purpose of experimental study is to find the effect of quartz powder and crimped fibers on strength properties of concrete. A partial substitution of cement by an quartz powder are utilized as a replacement of cement. It is proposed to study the cement is partially replaced the material of 10%,20%&30% of quartz powder and crimped fibers with constant ratio 1.5.The impact shared utilization of quartz powder and fibers on compressive strength, split tensile strength of M_{25} grade of concrete is studied. To tackle it, we chose quartz; a mineral commonly found in cement-based matrices and supposed to be chemically inert because of its crystalline structure. The pozzolanic reaction of quartz is a complex dissolution-precipitation reaction influenced by numerous parameters. It is only barely perceptible for the particle diameters exceeding a certain critical size. The XRD analysis is carried out to know the bond characteristics in the concrete specimens.

Key words: OPC, Crimped fibers, Quartz powder, Coarse aggregate, Fine aggregate.

I. INTRODUCTION

Concrete is the most important materials among the building materials. The characteristics of concrete as a building material to develop the strength, durability and economy have made it the world's most widely used construction material.

The production of one ton of cement consumes about 1.5 tons of raw materials, 80 units of electric power apart from 400Kg of CO_2 released into the atmosphere. Out of the total CO_2 emissions (from various sources) worldwide, cement industry alone contributes about 7% of CO_2 emissions. Annual cement production rate of the world is increasing very much year by year. This environmental problem will most likely be increased due to exponential demand of Portland cement: By 2050, demand is expected to rise by 200% from 2010 levels reaching 6000 million tons/year.

Demand can be reduced by using supplementary cementing materials and other material which reduce Portland cement content of concrete. The properties of concrete can also be improved by using by-products and natural wastes as supplementary cementing material. Lot of energy and cost can also be saved by using these natural wastes and industrial by-products as partial replacements to OPC. Concrete is certainly the one of the most important construction material in the world. It use is over 10 billion tons per year and, when done well, concrete can present good mechanical strength, and also, acceptable durability performance. The one of the most important components of concrete is the binder and in normal concretes. It is in some cases, the presence of mineral additions, such as fly ash or silica fume etc.., are also be can be observed in its composition Quartz, most common of all minerals is composed of silicon dioxide, or silica, sio_2. It is an essential component of igneous and metamorphic rocks. The size varies from specimens weighing a metric ton to minute part
icles that sparkle in rock surfaces. The luster in some specimens is vitreous; in others it is greasy or glossy. Some specimens are transparent; others are translucent. In pure form, quartz is colorless from of quartz occurring in distinct crystals Rose quartz is coarsely crystalline and colored rose red or pink. Smoky yellow to dark brown. Amethyst, a semiprecious variety of quartz, is purple or violet.

II. MATERIALS AND METHODS

In present investigation the collected materials are 53 grade OPC cement, Quartz powder, Natural sand, crushed granite aggregate were used in concrete.

Cement:

Cement is a binder material, which is used in construction that sets and binds to another material together. In the present investigation, commercially available 53 grade ordinary Portland cement was supplied by Zuari cement with specific gravity of 3.12 and fineness modulus of 225m^2/kg . The cement confirming to IS 12269-1987 is used in this investigation.

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AN EXPERIMENTAL INVESTIGATION ON THE RELATIONSHIP BETWEEN ELECTRICAL RESISTIVITY AND MECHANICAL AND DURABILITY PROPERTIES OF M_{30} GRADE CONCRETE.

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Abstract - *The durability properties of concrete are evaluated using many test methods. Concrete is a heterogeneous material and the use of different materials and chemical admixtures into it produce different effects which lead to the variations in performance of concrete. There are some of the standard methods of evaluating the mechanical properties of concrete but only a few durability tests. Non-destructive tests on concrete are standardized. The relationship between all mechanical and durability properties are not fully established. Many durability properties of concrete can be attributed to the microstructure of concrete, chemical composition of pore solution and the ability of concrete against the transport properties.*

In the present investigation an attempt is made to compare the mechanical and durability properties of standard and silica fume M_{30} grade concrete with the surface electrical properties i.e., electrical resistivity characteristics.

Key Words: *OPC concrete, silica fume, electrical resistivity, chloride permeability, water permeability.*

1. INTRODUCTION

Cement concrete has become the most indispensable construction material now-a-days. Due to environmental effects and influences, the deterioration of concrete has become the most common phenomenon. Due to the deterioration of concrete, the life span of concrete structure decreases and at the same time, the costs of repairs for the deteriorated concrete structures shoot up. Hence there is always a dire need to have easy and economical methods of finding out the deterioration before it actually takes place. Though there are many non- destructive methods available, the tests on durability of concrete which are simple and economical are yet to be used in the field Widely. The permeability of concrete, the pore solution pore chemical composition are the major cause for transportation of liquids or gases into concrete which finally lead to deterioration of concrete in many ways i.e., corrosion of steel, alkali aggregate reaction, chemical dispersion of concrete etc. Electrical resistivity method is a simple test to find out the potential difference between the electrodes and gives scope for correlating these values to the permeability values i.e., chloride permeability and water permeability as the concrete become denser, the electrical resistivity of concrete increases. Though the strength of concrete depends on so many factors, density/maturity/hydration of cement etc., parameters play important role in imparting strength to the concrete. Therefore an attempt is made in the present study to find out the relation between the mechanical and durability properties of concrete with the electrical resistivity of concrete. Though research has been done in this direction, universally accepted relationships were not established. The present study may add some information which will be helpful for further studies.

It is well known that the Electrical resistivity of concrete is an important value and can be related to some performance characteristics of concrete and can be used as a tool for assessment of quality of concrete(1).

On the other hand the electrical resistivity has been probably, the best known durability indicator for chloride induced deterioration of concrete structures. Because Electrical resistivity can be related to the volume fraction of pores, conductivity of pore solution and can be used to predict the diffusion coefficient of chloride ions and water permeability (2&3).

The four probe method is a well-known method for measuring electrical resistivity though there are various methods for finding out electrical resistivity. This method has an advantage that the electrical resistivity can be simply calculated from measuring results of voltage and electrical current.

2. MATERIALS AND METHODS

In the present investigation the 53 grade OPC, silica fume; natural sand, crushed granite aggregates are used.

Cement and aggregate: Ordinary Portland cement of 53 grade manufactured by Zuari cement company confirming to IS 12269 – 1987 is used. Natural sand conforming to Zone 2, with specific gravity of 2.65, fineness modulus 2.88 and

EXPERIMENTAL INVESTIGATION ON DURABILITY PROPERTIES OF PORTLAND POZZOLANA CEMENT CONCRETE BY USING CERAMIC WASTE AND QUARRY DUST AS PARTIALLY REPLACEMENT OF FINE AGGREGATE

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Abstract : *Increase in industrialization and urbanization, the use of buildings also increased which results in continuous usage of construction material leads to scarcity of the concrete materials. To overcome the issues many research were done to use many industrial waste as alternative or substantial material for concreting. In this project control concrete is casted for M40 grade and the partial replacement of concrete materials were decided to reuse industrial waste such as ceramic waste powder as fine aggregate replacement in range of 10%,15%,20%,25%,30%,40% by weight of sand and the quarry dust as fine aggregate replacement in 10%,15%,20%, 25%,30%,40% by weight of fine aggregate. Were casted and tested for durability (acid resistance test, sulphate attack test, alkalinity test, rcpt and water permeability) at 28, 56, 90 days curing of concrete. The obtained results are compared with M40 grade conventional concrete.*

Key Words: *Quarry dust , Ceramic powder, compressive test, durability tests, etc.*

I. INTRODUCTION

Concrete is mainly a composite material used throughout the world. It is obtained by combining adequate quantities of synthetic materials, gravel and water. The term "concrete" derives from the Latin word "concrescere", which means it develops together. Concrete consists of three basic compounds, cement, first class and coarse mixture. The best cement is made in these additives. And each quality and coarse amount is clearly taken. This is another major issue, with the destruction of the surrounding areas noticeably and the disposal of large-scale demolition waste. Therefore, these problems can be cleared by using concrete waste, rice coarse, ash, quarry waste, marble waste and ceramic waste in concrete. This can save the environment and equipment is easily available and cheaper. In this study ceramic waste and quarry dust are used in sand. Earlier studies these wastes are already being used in concrete. But in some studies they are partially used and in some studies they are used in transparent. But each section of these disciplines is used parallel, but each part of these disciplines is used in parallel.

II.LITERATURE REVIEW

N.Naveen Prasad (2016): Crushed waste tiles and Granite powder were used as a replacement to the coarse aggregates and fine aggregate. The combustion of waste crushed tiles were replaced in place of coarse aggregates by 10%, 20%, 30% and 40% and Granite powder was replaced in place of fine aggregate by 10%, 20%, 30% and 40% without changing the mix design. M25 grade of concrete was designed to prepare the conventional mix. Without changing the mix design different types of mixes were prepared by replacing the coarse aggregates and fine aggregate at different percentages of crushed tiles and granite powder. Experimental investigation is carried out. The 9 workability of concrete increased with increase in granite powder and it has been observed that the compressive strength is maximum at 30% of coarse aggregate replacement.

Parminder Singh and Dr. Rakesh Kumar Singla (2015): A research paper on utilization of ceramic waste tiles from industries. A partial replacement to coarse aggregate has been studied. Three different grades of concrete has been prepared and tested. The results are not appropriate with the conventional but considering the strength properties, it is advisable to use ceramic tile aggregate in concrete. It is finally concluded that, about 20% of ceramic tile usage in M20 grade of concrete is preferable.

Paul O. Awoyera (2016): The usage of ceramic tiles in concrete was observed in this paper. In this, both the coarse and fine aggregates are replaced with ceramic fine and ceramic coarse aggregates obtained from construction sites of Ota, Lagos and Nigeria in various percentages. The ceramic fine and coarse aggregates are replaced in conventional concrete individually and the strength parameters are studied. Finally, it states that usage of ceramic waste in concrete gives considerable increase in strength compared to conventional concrete.

P. Rajalakshmi (2016): Use of ceramic waste will ensure an effective measure in maintaining environment and improving properties of concrete. The replacement of aggregates in concrete by ceramic wastes will have major environmental benefits. In ceramic industry about 30% production goes as waste. The ceramic waste aggregate is hard and durable material than the conventional coarse aggregate. It has good thermal resistance. The durability properties of ceramic waste aggregate are also good. This research studied the fine aggregate replacement by ceramic tiles fine aggregate accordingly in the range of 10% and coarse aggregate accordingly in the range of 30%, 60%,100% by weight of M-30 grade concrete. This paper recommends that waste ceramic tiles can be used as an alternate construction material to coarse and fine

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BEHAVIOUR OF CONCRETE WITH GRANITE POLISHING POWDER ON PARTIAL REPLACEMENT OF CEMENT

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Abstract: **The theme of the experimental investigation is to find the use of naturally available waste material as a partial replacement of cement resulting in improving the test results. the manufacturing of cement process involves emission of CO_2 for every tone of cement approximately four hundred kilograms of CO_2 is released in to the atmosphere. For a considerable amount in the environment resulting in global warming, thus investigation of these partial substituents in cement reduces this ill effect making an environment free construction. Granite polishing powder is industrial by product generated from the polishing industries. These byproducts are left largely unused and are hazardous material to human health problem. The granite polishing powder is used in 90 micron sieve of a particle size is used to whole project. The objective of this thesis is to find optimum percentages up to which this pozzolanic waste material can replace OPC-53 grade cement obtain the maximum test results. It is proposed to study the cement is partial replaced the material of 0%, 5%, 10%, 15% and 20% by weight of cement, curing periods as 14, 28, 56 and 90 days. The impact shared on the utilization of granite polishing powder on compressive strength, split tensile strength of M_{30} grade of concrete can be studied.**

Key words: Cement, Granite Polishing Powder, Fine aggregate, Coarse aggregate and Water.

I. INTRODUCTION

Concrete is the most important in the construction field. It is obtained by combining adequate of synthetic materials, gravel and water. The terms concrete from Latin "concrete ", which means it develops together. Concrete consists of three basic compounds, cement, first class and coarse admixtures. Concrete mix design is the science of deciding relative proportions of concrete ingredients to achieve the desired properties in the most economical way. The concrete being used as 2nd most essential material in the world and most of the companies are in need of economical concrete by replacing cement by cementations material. Concrete is the most important component used in the construction industry throughout the work. Due urbanization the use of cement in the construction industry gets increased rapidly. During the production process Co_2 is emitted into the atmosphere which causes damage to the environment. As a matter of fact, concrete is the frequently mentioned material in the construction industry. It is a versatility durability and economical have made it the world's most used construction material, because it can be designed for strength from 10 N/mm^2 up to 100 N/mm^2 which is regarded as its grade. A good number of building failures are traceable to concrete incompetence among several other factors.

In recent years, environmental destruction and global warming have become major problem. Heightening concern about worldwide ecological issue, changeover the large scale manufacturing, mass-waste, mass-utilization, society of the past to a zero-emission society is presently seen as essential. For reducing the pollution we used the Granite Polishing Powder as the percentage replacement of the cement. Concrete is a strong and tough material. Compared to many other engineering material such as steel, rubber, etc. Concrete requires less energy input for its manufacture. Currently a large number of mineral admixtures, which are waste product of other industries are being beneficially used in making quality concrete. Concrete is the most preferred material.

1.1 CONSTITUENT MATERIALS USED

The constituents cloth used are ordinary Portland cement 53 Grade, Granite polishing Powder, Fine aggregate, Coarse aggregate, and water. The endorsed substance has been described below.

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Electrical Engineering

Firefly algorithm based solution to minimize the real power loss in a power system

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Abstract

This paper proposes a method to minimize the real power loss (RPL) of a power system transmission network using a new meta-heuristic algorithm known as firefly algorithm (FA) by optimizing the control variables such as transformer taps, UPFC location and UPFC series injected voltage magnitude and phase angle. A software program is developed in MATLAB environment for FA to minimize the RPL by optimizing (i) only the transformer tap values, (ii) only UPFC location and its variables with optimized tap

energies

MDPI

Article

A Proportional Resonant Controller for Suppressing Resonance in Grid Tied Multilevel Inverter

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Abstract: Photovoltaic (PV) resources are connected to power grid through voltage source inverters. The quality of power output from PV inverter should be in grid compliance of IEEE standard. In this regard, the deployment of appropriate low pass filters such as inductor (L), capacitor (C) or inductor capacitor inductor (LCL) is critical as they aid in minimizing the harmonics being injected into the grid. LCL filters are well entrenched but they bring in stability issue due to resonance and therefore a damping controller with suitable control logic is needed. In this work, to suppress resonance, a Proportional Resonant-Derivative (PR-D) controller has been designed, proposed, and compared with existing counterparts, i.e., two-degree of freedom controller (2DOF) and feedback current controller. The results exhibits that PR-D controller admits meliorate resonance damping and constancy when compared with the two other schemes. The whole system has been simulated in MATLAB/Simulink environment and a prototype has also been made to ensure the performance.

Keywords: photovoltaic; two degrees of freedom; proportional resonant-derivative; feedback current controller; maximum power point tracking; multilevel inverter

1. Introduction

Photovoltaic (PV) power generation has become the most promising way of power generation among the renewable sources due its inherent advantages. The major hurdle that PV system faces, similar to other renewable sources, is the power intermittency with respect to atmospheric conditions such as irradiation and temperature. With the advent of advanced controllers and efficient dc-dc converters, the intermittency issues are meritoriously addressed [1]. In a contemporary note, many novel dc-dc converters have been introduced in research arena, but the appeal remains the same in case of the three well entrenched converters, i.e. buck, boost, and buck boost converters. The choice of dc-dc converters depends on the voltage levels of source and load. The role of the dc-dc converters in PV system is very critical, as it only regulates the voltage but also makes most of the PV power available through an intelligent maximum power tracking (MPPT) algorithm [2]. MPPT facilitates the yield of maximum available power for the given atmospheric conditions. Numerous MPPT algorithms have been archived in research forum [3]. The modified and new MPPT algorithms claimed to be novel either in alleviating the complexity involved in execution of the algorithm in real time or in making the algorithm not prone to oscillations and inaccuracies [4]. Nevertheless, two well established MPPT algorithms, perturb and observe (P&O) and incremental conductance (INC), remain the most prevalent choices in the PV industry [5]. P&O is a simple and cost effective MPPT controller but the oscillation in the power output due to the inherent comparative search mechanism is indispensable.

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Supply Grid Voltage Regulation as a STATCOM from iUPQC Controller by Hybrid Fuzzy-Pi Based

S. Muqthiarali, M. Tech, +1 author G. Venkatesh • Published 2018 • Engineering

This paper presents an improved controller for the dual topology of the unified power quality conditioner (iUPQC) with the usage of fuzzy logic controller extending its applicability in power-quality compensation, as well as in microgrid applications. Here we are using fuzzy logic controller along with PI controllers. The iUPQC will work as a static synchronous compensator (STATCOM) at the grid side, while providing also the conventional UPQC compensations at the load or micro-grid side. By… Expand

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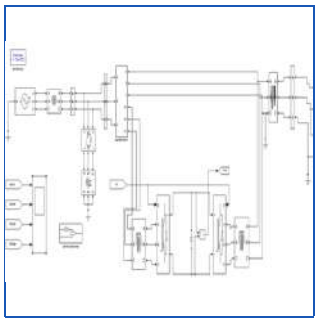

Figure 11

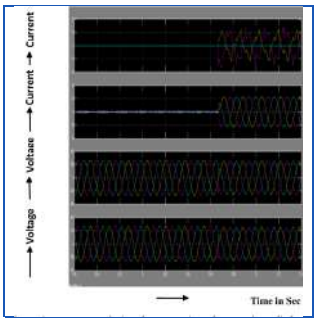

Figure 12

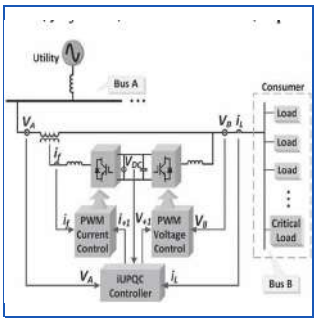

Figure 2

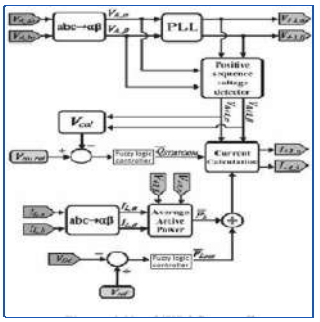

Figure 3

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Siliveru Sarada

A Scalar Based Svpwm And Dpwm Techniques For 3-Level Inverter Fed Dtc Of Open End Winding Induction Motor Drive

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Fractional Order PID Controlled Cascaded Re-boost Seven Level Inverter Fed Induction Motor System with Enhanced Response

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ABSTRACT

Recently, Re-boost seven-level inverter has been developed as an alternative between Photovoltaic system and single-phase load. DC level is increased using a re-boost regulator and its output is rehabilitated into single-phase AC utilizing a seven-level inverter. The re-boost converter is utilized to escalate the voltage gain. The objective of the suggested closed loop Re-boost Seven Level Inverter fed Induction Motor (RBSLIIM) system is to enhance the dynamic response of RBSLIIM using FO-P-I-D controller. Simulink models are developed for P-I and FO-P-I-D controlled RBSLIIM systems. The results of P-I and FO-P-I-D based RBSLIIM systems indicate that the voltage response with FO-P-I-D is superior to P-I controlled RBSLIIM system.

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1. INTRODUCTION

The extensive use of fossil fuels has resulted in the global problem of greenhouse emissions. Moreover, as the supplies of fossil fuels are depleted in the future, they will become increasingly expensive. Thus, solar energy is becoming more important since it produces less pollution and the cost of fossil fuel energy is rising, while the cost of solar arrays is decreasing.

In particular, small-capacity distributed power generation systems using solar energy may be widely used in residential applications in the near future [1], [2]. The power conversion interface is important to a grid- connected solar power generation systems because it converts the DC power generated by a solar cell array into AC power and feeds this AC power into the utility grid.

An inverter is necessary for the power conversion interface to convert the DC power to AC power [2]–[4]. Since the output voltage of a solar cell array is low, a DC-DC power converter is used in a small-capacity solar power generation system to boost the output voltage, so it can match the DC bus voltage of the inverter. The power conversion efficiency of the power conversion interface is important to ensure that there is no waste of the energy generated by the solar cell array. The active devices and passive devices in the inverter produce a power loss. The power losses due to active devices include both conduction losses and switching losses [5]. Conduction loss results from the use of active devices, while the switching loss is proportional to the voltage and the current changes for each switching and switching frequency. A filter inductor is used to process the switching harmonics of an inverter, so the power loss is proportional to the amount of switching harmonics.

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Modeling and Simulation of 127 Level Optimal Multilevel Inverter with Lower Number of Switches and Minimum THD

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ABSTRACT

This paper proposes a new optimal high level multilevel inverter with minimum number of components. This multi level inverter (MLI) is designed with series combination of basic units which can generate positive levels at output. DC source values applied for each basic unit is different with another. An H bridge is connected across proposed MLI for generating negative levels along with positive levels at output and that inverter considered as proposed high level optimal multilevel inverter. Single unit is responsible producing 21 levels. Therefore six units are connected in cascaded form to increase number of levels as 127 at output. Decrease in the number of power switches, driver circuits, and dc voltage sources are the improvement of the proposed MLI. Sinusoidal multiple pulse width modulation (SPWM) technique is implemented to produce pulses for turning ON switches according requirement. Low total harmonic distortion at output voltage or current production is major advantage of proposed module. The validations of proposed MLI results are verified through MATLAB/SIMULINK.

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1. INTRODUCTION

The power semi conductor switches cannot able to connect directly to high voltage network. The high-voltage high power with stand inverters demand is increasing day by day, in order to meet high voltage high power demand multilevel inverters are have been developed. By increasing number of levels at output wave form two main advantages are obtained one is sinusoidal like wave form at output and another is reduced total harmonic distortion in the output voltage and current waveform. In addition to that, minimum switching losses, voltage stress on switches are less[1-5].Mainly three types of traditional multilevel inverters are exist such as (i) neutral point clamped MLIs, (ii) flying-capacitor MLIs, (iii) cascaded H bridge type MLIs [6–9]. Cascaded multilevel inverters did not use diode clamped and/or flying capacitors for achieving reliability, modularity, simple control and lower number of switches [10-11]. Hence the switching losses and overall cost of proposed inverters decreases and efficiency can be improved [12].Various types of symmetric and asymmetric cascaded multilevel inverters presented in [13]–[18]. Two algorithms are presented like symmetric and asymmetric presented in [19]. Different asymmetric cascaded multilevel inverters have been presented for increasing the number of output levels in [20].

Basically six switch inverters were frequently used in industrial applications, but this type of inverters are not appropriate for low power applications due to very high switching losses and complexity

STABILITY IMPROVEMENT OF DC POWER SYSTEMS IN AN ALL-ELECTRIC SHIP USING HYBRID SMES/BATTERY

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Abstract: Energy storage systems are used in various applications to compensate for a fluctuating power demand. The combination of a prime mover and an energy storage device for reduction of fuel consumption has been successfully used in the automotive industry. As the capacity of all-electric ships (AESs) increases dramatically, the sudden changes in the system load may lead to serious problems, such as voltage fluctuations of the ship power grid, increased fuel consumption, and environmental emissions. In order to reduce the effects of system load fluctuations on system efficiency, and to maintain the bus voltage, we propose a hybrid energy storage system (HESS) for use in AESs. The HESS consists of two elements: a battery for high energy density storage and a superconducting magnetic energy storage (SMES) for high power density storage. A dynamic droop control is used to control charge/discharge prioritization. Maneuvering and pulse loads are the main sources of the sudden changes in AESs. There are several types of pulse loads, including electric weapons. These types of loads need large amounts of energy and high electrical power, which makes the HESS a promising power source. Using Simulink/MATLAB, we built a model of the AES power grid integrated with an SMES/battery to show its effectiveness in improving the quality of the power grid.

Index Terms **- All-electric ship (AES), hybrid energy storage system (HESS), superconducting magnetic energy storage (SMES), pulse load.**

I. INTRODUCTION

Recent research has resulted in wide use of energy storages (ES) for several applications such as electrical vehicles, diesel electric ships, or in relation with renewable energy production. There has also been an increasing attention around energy use in the oil and gas industry. Offshore drilling rigs are mobile units that perform exploration to develop new oil or gas fields. Drilling operations require heavy power consuming electrical motors which represent the main load on the vessels grid. The isolated grid of the drilling rig is usually supplied with diesel generators, in contrast to production platforms which can be powered by gas turbines or HVDC transmission from land. Introducing an energy storage such as a Capacitor bank may allow the motor loads to be operated more efficiently and may result in lower fuel consumption and emissions. The first objective of this project is to study how an energy storage system can improve efficiency of drilling operations for offshore drilling rigs and decide which requirements this sets for the energy storage. The specific power system studied is a DC-grid for jack-up rigs. The ES is intended to improve efficiency of a tripping operation, which involves lifting and lowering of the drill string and causes large variations in electrical load. An ES can smooth out load fluctuations on the diesel generators, allowing the motor loads to operate more independent from the diesel generators to speed up the tripping operation.

The studied load scenarios require an ES technology that can deliver rapidly increasing currents and high power. The second objective of this thesis is to investigate which ES technology is best suited for the studied load scenario. Mainly two technologies are considered; electrolytic capacitors and super capacitors. Comparing these technologies involves evaluating efficiency, energy- and power density. To solve the problem, the system is modelled in Simulink. The model itself is an important product of this project and can be used for further studies of Energy Storage and DC-grids. Building a model of the system requires study of the load situation, energy storage technologies, DC-DC converters and marine DC-systems with diesel generators.

On the AES design, one of the most important features is the ramp-rate of the generators. The ramp-rate is the increased or decreased rate of the output power per minute and usually in MW/minute. The ramp-rate of ships' generators, such as gas turbine generators are in the range of 35 to 50 MW/minute, whereas the pulse loads required a 100 MW/second ramp-rate, which is significantly higher than the ramp-rate of the generators. If the changes in the loads are faster than the ramp rate of the generators, unbalanced power between loads and generators occurs, which leads to instability in the power system. Because the ramp-rate of the ship's generators is not high enough to maintain the power demanded by electrical weapons, the need for an integrated power system (IPS) architecture is inevitable. In this paper, we propose the use of the superconducting magnetic energy storage (SMES)/battery HESS in AESs. Compared with super capacitors, flywheels, and other energy storage devices, SMES devices have higher power density, faster time response and unlimited charge and

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Evaluation of Performance of Single Cylinder 4S- CI Engine Using a Neat Biodiesel Blend

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Abstract- The experimentation was carried out on a single cylinder, water cooled, direct injection diesel engine to operate on polanga oil methyl ester-diesel blend(PME20) for different injection timings such as 23^0bTDC, 20^0bTDC, 26^0bTDC and 29^0bTDC, at rated speed, under varying loads from no load to full load(0%-100%). The exhaustive tests were carried out to evaluate the performance and emission characteristics of diesel engine operated on PME20 (composition of 20% diesel and 80% neat PME fuel) to find optimum fuel injection timing(FIT) amongst selected FITs, in comparison with base line data of high speed diesel(HD) fuelled CI engine. PME20 has shown overall better performance, and emission characteristics, at 26^0bTDC and at 80% of full load.

Keywords- PME20; FIT; HD; bTDC

1. INTRODUCTION

The global concern for air pollution and depletion of ozone layer has forced to re-evaluate the use of conventional fuels like gasoline, diesel and coal as well. In view of continues growth in demand of energy and rise of fossil fuels cost, it is emerged to investigate for most appropriate substitute for diesel fuel. Biodiesel refers to any diesel-equivalent bio-fuel made from renewable biological materials such as vegetable oils or animal fats. It is usually produced by trans-esterification and esterification reaction of vegetable oil with a low molecular weight alcohols such as ethanol and methanol. During this process triglyceride molecule from vegetable oil is removed in the form of glycerin (soap).Once the glycerin is removed from the oil, the remaining molecules are, to a diesel engine somewhat similar to those of petroleum diesel fuel. Biodiesels are essentially free of sulphur and aromatics. Biodiesel is a fuel naturally inbuilt with about 10% of oxygen. The concept of using vegetable oil as a fuel in 1895 when Dr. Rudolf Diesel developed the first diesel engine to run on vegetable oil.

In the present study polanga methyl ester –diesel blend (PME20) was selected as test fuel and investigation was carried out at four different injection timings.

2. LITERATURE REVIEW

Most of the researchers reported that the performance of biodiesel fuelled diesel engine is poor than petro-diesel operated engine. Interestingly, some of the researchers reported that thermal efficiency was higher with biodiesel than diesel fuel [1]. Some of the investigations showed that lower HC, CO and particulate matter emissions, but higher NOx emission for biodiesel [16, 17]. The biodiesel operation reduces the harmful emissions viz., CO, HC and smoke but with little increment of NOx emissions relative to diesel fuel [2]. The biodiesel blends and neat biodiesel in diesel engine reduces carbon monoxides about 3-15% [3] unburnt hydrocarbons about 6-40% [4] and smoke density to 45% [5] compared to ULSD (ultra low sulfur diesel). However, the biodiesel blended fuels operation had shown NOx emissions up to 26% [6], BSFC increased by 6-15% [7] decreases in brake thermal efficiency up to 9% [8]. It was reported that the NOx reduced in descending order are: CME, PME, SME, WME, and RME; PM emissions reduction varies from 53%-69% [9]. 50% jatropha biodiesel blend showed maximum power with less smoke amongst all the biodiesels and their blends than diesel [10]. The rice bran biodiesel fuelled engines produced less CO, unburned HC, and PM emissions when compared to diesel fuel but higher NOx emissions [11]. The biodiesel blended fuels have strong beneficial impacts on HC, CO and PM emissions but adverse effects on NOx emissions [12-14]. Calophyllum Inophyllum (polanga) biodiesel and additives showed BTE increased and lower in BSFC than diesel [15]. There was an improvement in BTE, BSFC and substantial improvements in reduction of emissions for TRCC operated at higher injection pressure by improved combustion, due to better air motion inside the cylinder and high pressure injection increases the oxides of nitrogen (NOx) [18]. With four different fuel injection pressures (18, 20, 22, and 24 MPa) diesel engine operation showed that there was increase in BSFC, CO_2, NOx emissions, while HC and CO emissions were reduced at low injection pressures where as these values decrease with

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Impact of Thermal in Stokes Second Problem for Unsteady Second Grade Fluid Flow

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Abstract- This paper tosses light on the impact of thermal in Stokes second problem for unsteady second grade liquid move through porous medium. The expressions for the temperature field and the velocity field are acquired scientifically. The impacts of different rising parameters on the velocity field and the temperature field are considered through graphs in detail.

Keywords: Unsteady Second grade fluid, Porous medium, Thermal.

1 INTRODUCTION

Recently, the study of non- Newtonian fluids drew considerable attention due to their pragmatic applications. As the non- Newtonian fluids and its applications are being vital in modern technology and industries, research on such fluids are imminent. A great number of technologically and industrially vital fluids such as polymers, molten plastics, fossil fuels, foods and, pulps which may douse in underground bedsteads, display non-Newtonian behavior. Many non-Newtonian fluid prototypes have been proposed, owing to density of fluids and their properties. Therefore this category of non-Newtonian fluids, second grade fluid is the modest subclass for an analytic solution can be practically possible to discover. If the non- Newtonian fluids correspond to physically realistic situations, meticulous analytic solutions for the flows of such fluids are most likely to find, as they serve a dual purpose. Firstly, they deliver a resolution to the flow that has technical bearing. Secondly, the solutions aforementioned can be used as authorizations against intricate arithmetical cods that have been brought up for much more complex flows. Non-Newtonian fluids were studied under different Physical aspects in the recent past by Hayat et al., [2], Fetecau and Fetecau[1], Chen et al., [3], Tan and Masuoka, [5], Fetecau and Fetecau, [4].

Chauhan and Olkha [6] ventured to study the impact of space temperature dependent hear source/sink whrn heat radiation over porous stretched sheet was present. Different models of the second grade liquid issue have been contemplated by Hayat et al. [8], Baris and Dokuz [7],. Khan et al. [10], Makanda et al. [12], Hameed et al. [9] and Akinbobola [11] are contemplated magnetic and heat transfer in a vertical tube on the peristaltic transport of a second grade liquid.

The impact of temperature subordinate viscosity on viscoelastic liquid, for example, second grade liquid causes changes in the properties of the liquid. For gases, the viscosity increments as temperature increments while for fluid it diminishes as temperature increments. Thus, a lot of research work has been committed to think about the impacts of many variable consistency models.

Massoudi and Phuoc [13] utilized Reynolds Viscosity model to research the impact of variable viscosity in a completely developed flow of non-Newtonian fluid down a heated inclined plane. A similar Reynolds law was utilized in summed up second gradefluid between two vertical parallel dividers by Massoudi et al. [14]. Ramya et al [15] Studied the impacts of temperature dependent viscosity on flow and heat transfer in a viscoelastic liquid in a permeable medium. They accepted that the viscosity shifts conversely as a component of temperature. Different unidirectional transient flows of a second grade liquid in a space with one limited measurement are considered by R Bandelli et al [16].

The development of a viscoud liquid caused by the sinusoidal faltering of a level plate is named as Stokes' second issue by Schliching [17]. At first, both the plate and fluid are thought to be very still. At time t = 0+, the plate all of a sudden begins oscillating with the velocity $U_0 e^{i\omega t}$. The investigation of the flow of a viscous fluid over a swaying plate isn't just of principal hypothetical premium yet it likewise happens

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Heat transfer effect on an oscillatory flow of Jeffrey fluid through a porous medium in a tube

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Abstract

In this paper, we examined the impact of heat transfer on oscillatory flow of Jeffrey fluid through a permeable medium in a circular tube. The expressions for the temperature field and velocity field are obtained analytically. It is discovered that the velocity field increases with increasing or , while it decreases with increasing or . Additionally It is observed that, the temperature field decreases with increasing .

Keywords: *Heat transfer, oscillatory flow, Jeffrey fluid and porous medium*

1. Introduction

The examination of oscillatory flow of a viscous fluid in cylindrical tubes has received the consideration of numerous specialists as they assume a critical job in understanding the imperative physiological issue, specifically the blood flow in arteriosclerotic blood vessel. Womersley [17] have looked into the oscillating flow of thin walled elastic tube. Detailed estimations of the oscillating velocity profiles were made by Linford and Ryan [10], Unsteady and oscillatory flow of viscous fluids in locally constricted, rigid, axisymmetric tubes at low Reynolds number has been thought about by Ramachandra Rao and Devanathan [14], Hall [9] and Schneck and Ostrach [15]. Haldar [8] have thought about the oscillatory flow of a blood through an artery with a mild constriction. few different specialists, Misra and Singh [11], Ogulu and Alabraba [12], Tay and Ogulu [16] and Elshahed [7], to make reference to however a couple, have in one way or the other modeled and studied the flow of blood through a rigid tube under the influence of pulsatile pressure gradient.

Lalithajyothi et al. [1] contemplated the pulsatile flow of a jeffrey fluid in a circular tube having internal porous lining.Vajravelu et al. [2] examined the unsteady flow of two immiscible conducting fluids between two permeable beds. Spurred by the above examinations, pulsatile flow of a Jeffrey fluid between permeable beds is investigated. The influence of melting heat transfer and thermal radiation on MHD stagnation point flow of an electrically conducting Jeffrey fluid over a stretching sheet with partial surface slip is performed by Das et al.[3]. Sreenadh et al. [4] explored free convective flow of a Jeffrey fluid in a vertical deformable porous stratum. They observed that the skin friction gets reduced when the porous material is a deformable one and seen that the impact of increasing Jeffrey parameter is to increase the skin friction in the deformable porous stratum. Nallapu and Radhakrishnamacharya [5] studied Jeffrey fluid flow in the presence of magnetic field through porous medium in tubes of small diameters. The impact of slip and heat transfer on the peristatic transport of Jeffrey fluid in a vertical asymmetric channel in porous medium is talked about by Lakshminarayana et al. [6]. Farooq et al.[13] are steadied MHD flow of a Jeffery fluid with Newtonian heating .Kavith et al[18] are analyzed per static transport of a Jeffery fluid in consistent with Newtonian fluid in an inclined channel. Ali et al.[19] are talked about logical solution for oscillatory flow in a channel for Jeffery fluid .

In perspective of these, we inspected the effect of heat transfer on oscillatory flow of Jeffrey fluid through a porous medium in a circular tube. The expressions for temperature field and the

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Design and Fabrication of Motorised Stair Case Climbing Trolley

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Abstract

Despite rapid changes in the way the things are being manufactured, we are still used to the age of techniques of manufacturing. The reasons are multifold ranging from inertia, rejection of the new technologies, lack of engineering aptitude, lack of skill & technical know-how and most importantly fear of losing employment opportunities. This project aims at developing a mechanism for easy transportation of heavy loads over stairs. The need for such a system arises from day-to-day requirements in our society. Devices such as hand trolleys are used to relieve the stress of lifting while on flat ground. However, these devices usually fail when it comes to carrying the load over short fleet of stairs. In the light of this, the project attempts to design a stair climbing hand cart which can carry heavy objects up the stairs with less effort compared to carrying them manually. In present project, the trolley is equipped with Tri-Star wheels which enable us to carry load up and down the stairs and also eases the movement of trolley in irregular surfaces like holes and bumps.

Keywords: Tri-Star wheel, Wheel frame, Hybrid stepped motor, Step angle, Step length.

INTRODUCTION

Stair Climbing is a key functionality desired for robots deployed in Urban Search and Rescue (USAR) scenarios. A novel compliant modular robot was proposed earlier to climb steep and big obstacles. This work extends the functionality of this robot to ascend and descend stairs of dimensions that are also typical of an urban setting. Stair Climbing is realized by equipping the robot's link joints with optimally designed passive spring pairs that resist clockwise and counter clockwise moments generated by the ground during the climbing motion.] Sonukumar Krishnaprasad Singh et.al[2017] are presented a paper on Design & Fabrication of semi-automatic stair climbing trolley. P.JayPraveenrajet.al.[2016] are given the modifications in the trolley design of their paper on Design and Fabrication of stair climbing trolley. M.M.Mogaddam and M.M.Dalvand [2005] have submitted a paper on Stair climbing mechanism for Mobile Robots. A.S.Shriwaskar and S.K.Choudary[2013] are presented an article on Synthesis,Modeling ,Analysis and Simulation of stair climbing mechanism. M.-S. Wang and Y.-M. Tu, [2008] are presented a paper on the Design and implementation of a stair-climbing robot. Q. Zhang, S. S. Ge, and P. Y. Tao [2011] are considered Autonomous stair climbing for mobile tracked robot in their project to develop the robotics . Murray J. Lawn [2003] has investigated the Modeling of a stair-climbing wheelchair mechanism with high single-step capability. Luc Jaulin [2007] are presented a paper on the Control of a wheeled stair-climbing robot using linear programming. Sri Harsha Turlapati [2015] are submitted an article on Stair Climbing Using a Compliant Modular Robot. Md. Farhad Ismail [2012] are proposed the Fabrication of a Stair Climbing Vehicle for Industrial and Rescue application Using Appropriate Technology in their article. Jinguo Liu [2005] are presented a paper in proceedings on Analysis of Stairs-Climbing Ability for a Tracked Reconfigurable Modular Robot.

THEORY & COMPONENTS

In day-to-day life we need to carry some goods and objects through stairs especially in offices, schools, colleges, hotels, industries, apartments etc. where the lifts may not be available, may be crowded with people or under repair .It is difficult to carry various objects through stairs manually for higher floors. A stair climber is a type of trolley fitted with rotating wheels or tracks so that it can be pushed or pulled up or down steps or a stairway. Stair climbers can be manual or battery-powered, and are commonly found in wheel, track, and push arm or walker variants.

Tri-Star Wheel

The Tri-Star wheel was designed in 1967 by Robert and John Forsyth of the Lockheed Aircraft Corporation. They were first developed as a module of the Lockheed Terrastar, a commercially unsuccessful amphibious military vehicle. A Tri-Star wheel functions as an ordinary wheel on flat ground, but has the ability to climb automatically when an impediment to rolling is encountered. This wheel design consists of three tires, each mounted to a separate shaft. These shafts are located at the vertices of an equilateral triangle. The three shafts are geared to a fourth, central shaft (to which a motor may be attached). When geared in this quasi-planetary fashion, these triangular sets of wheels can negotiate many types of terrain, including sand and mud; they can also allow a vehicle to climb over small obstructions such as rocks, holes, and stairs. The wheel assembly may be gear-driven, with two wheels in rolling contact with the ground. The third wheel idles at the top until the lower front wheel hits an obstruction. The obstruction prevents the lower front wheel from moving forward but does not affect the motion of the driving axle. This causes the top wheel to roll forward into position as the new front wheel. This wheel usually lands on top of the obstruction and allows the rest of the assembly to vault over the obstruction. Tri-Star wheel in motion is shown in figure2.1.

AN IMAGE QUALITY EVALUATION IN CLINICAL RESEARCH ON BRAIN AND CARDIAC MRI IMAGES IN MULTI-CENTER CLINICAL TRIALS

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Abstract – MRI system images are important components in the development of drugs because it can reveal the underlying pathology in diseases. Unfortunately the processes of image acquisition, storage, transmission, processing and analysis can influence image quality with the risk of compromising the reliability of MRI-based data. Therefore, it is necessary to monitor image quality throughout the different stages of the imaging workflow. This report describes a new approach to evaluate the quality of an MRI slice in multi-center clinical trials. The design philosophy assumes that an MRI slice, like all natural images, possess statistical properties that can describe different levels of contrast degradation. A unique set of pixel configuration is assigned to each possible level of contrast-distorted MRI slice. Invocation of the central limit theorem results in two separate Gaussian distributions. The central limit theorem says that the mean and standard deviation of pixel configuration assigned to each possible level of contrast degradation will follow a normal distribution. The mean of each normal distribution corresponds to the mean and standard deviation of the underlying ideal image. Quality prediction processes for a test image can be summarized into four steps. The first step extract local contrast feature image from the test image. The second step computes the mean and standard deviation of the feature image. The third step separately standardizes each normal distribution using the mean and standard deviation computed from the feature image. This gives two separate z-scores. The fourth step predicts the lightness contrast quality score and the texture contrast quality score from cumulative distribution function of the appropriate normal distribution. The proposed method was evaluated objectively on brain and cardiac MRI volume data using four different types and levels of degradation. The four types of degradation are Rician noise, circular blur, motion blur and intensity non uniformity also known as bias fields. Objective evaluation was validated using a proposed variation of difference of mean opinion scores. Results from performance evaluation show that the proposed method will be suitable to monitor and standardize image quality throughout the different stages of imaging workflow in large clinical trials.

I. INTRODUCTION

We are experiencing a time of great growth in knowledge about human disease. However, translation of the knowledge into clinical practice has not kept pace. Clinical trials are an important part of the drug development process. The cost of conducting clinical trials has become greater because: 1) regulations on how the trial must be conducted have become more complex: 2) proposed therapies must be compared against standard therapies; and 3) if the end point is survival—it may take longer to reach that end-point as therapies and non-specific supportive measures become more effective. Moreover, therapies administered prior to or subsequent to the experimental intervention may confound the interpretation of survival as an endpoint. Finding valid alternative outcome measures that can be observed soon after the therapy is given could reduce the cost of drug trials, and make effective therapies available to the public more quickly. Imaging can assess therapeutic efficacy for cancers and may be a part of the solution to reduce costs and improve timeliness of clinical trials. In multi-center clinical trials, attribute-based quality evaluation is one of the quality control procedures to assess, normalize and standardize the diagnostic information contained in medical image data from different imaging system manufacturers, different clinical trial sites and different acquisition protocols before they are fed to automated image analysis systems. This matlab code is the implementation of objective quality evaluation for images used in clinical research reported in Image Quality Evaluation in Clinical Research: A Case Study on Brain and Cardiac MRI Images in Multi-Center Clinical Trials by M. Osadebey, M. Pedersen, D. Arnold and Katrina Wendel-Mitoraj. The report was accepted for publication in IEEE Journal of Translational Engineering in Health and Medicine (IJTEHM). The algorithm predicts the quality index of an images using two attributes, namely, local contrast and texture contrast. The

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IMPLEMENTATION OF BOTTLE FILLING USING SCADA

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Abstract – The objective of this paper is to design, develop and monitor "Bottle filling using SCADA". This work provides with a lot of benefits like low power consumption, low operational cost, less maintenance, accuracy and many more. This project is based on Industrial Automation and is a vast application used in many industries like milk industries, chemical, food, mineral water and many industrial manufactures. A prototype has been developed to illustrate the project. Filling is the task that is carried out by a machine and this process is widely used in many industries. In this project, the filling of the bottle is controlled by using a controller known as PLC which is also the heart of the entire system. For the conveyor system, a DC motor has been selected for better performance and ease of operation. Various sensors have been used to detect the position of the bottle. In our project we have use less numbers of system hence the overall cost has been reduced to an extent. Ladder logic has been used for the programming of the PLC, which is the most widely used and accepted language for the programming of the PLC. The PLC used in this system is an ARM7 Cortex M3 which makes the system more flexible and easy to operate.

Key words : **Cortex M3, Proximity sensor, Conveyor belt, SCADA, Ladder Logic etc.**

I. INTRODUCTION

Bottle filling systems generally requires an automated system and important that bottles need not be over filled or under filled. SCADA plays a important role in automation of bottle filling system. In the bottle filling process the bottle must be placed in conveyor belt and one bottle must be filled at a time. Periodically the bottle comes in to the outlet valve of the tank. The level must be maintained at the set point and the out let valve must be opened and bottle must be filled. A control program detects the position of bottle under the outlet valve, stops the feed motor, stops the conveyor, opens the solenoid valve and fills the bottle. After the bottle gets filled completely the outlet valve must be closed and the conveyor is restarted to fill the next bottle. The sensors used in this system must be a binary sensor as the contacts must be opened or closed when the object reaches the specific position and actuates the switches. So the binary sensors are used as switches. In this paper bottle filling system is realized with ARM7 is along with the sensors as an input and the valves as the output of the system. This will improve the accuracy and reduces the operating time of the bottle filling system. SCADA systems are generally used for controlling systems such as cooling, ventilation, power distribution and also in experimental laboratories, SCADA is the software package interconnected with hardware situated at the top of the hardware to which it is interconnected, generally via PLCs (Programmable Logic Controllers), or other commercial hardware modules. The upcoming features of ARM7 which can act as both PLC and personal computer, thus grow at a great pace in numerous fields like automation, medical, industries, etc.., this feature is a great advantage of using ARM7. The main objective of this paper is to design an innovative and intelligent control and monitoring system for bottle filling process by using "ARM7" as an effective alternative to PLCs. And also to develop a SCADA system for a bottle filling process which can be controlled and monitored from the control room through online. The developed system provides the bottle filling process in an accurate manner. This proposed model offers good result in filling and capping the bottle with an appropriate level using the ARM7.

II. LITERATURE REVIEW

PLC based Automatic Bottle filling system was proposed by Jaymen patel(2015). The filling operations were controlled by PLC. The bottles are filled simultaneously further filling and capping operation takes place simultaneously. This work necessities the usage of bottles with uniform shape size, weight. Implementation of bottle filling and capping using PLC with SCADA was proposed by Anup Darke et.al., (2015). A bottle filling system with PLC allows the user to fill the bottle till a desired level has been reached without wastage of the liquid. In addition to this, the use of SCADA has also been implemented for the monitoring of the entire system. Limitation of this system is that it can fill only few bottles in a minute. As required by the industry this system is not so fast and hence lacks productivity.

Amol A. Dharmapurikar and Waghmare R.B. (2015) have focused on an Effective Wireless Solution For Industrial Automation by using Raspberry Pi. Embedded web server is the

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SECRETS OF I/O FUNCTIONS IN C

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Abstract: *scanf() is the C programming language function to do formatted inputting. printf() is the C programming language function to do formatted outputting. This paper explains the how scanf(),printf() works and how to design the proper formatted specifications for read and write.*

Index Terms:Input,Ouptut,stdin.stdout,stdio.h

I INTRODUCTION

In olden days, the programmers will write the data and print the data using their own subroutines. It was so easy. But even though it was easy, it still took some effort. **Input** means to give the data to the program and **Output** means to display data on screen or write the data to a printer or a file. In C programming language has many built-in functions that are used to read any given input and to display any generated data on screen when there is a need to output the result. We will learn about such functions, which can be used in our program to take data as input from user and to output the result on display. All these built-in functions are present in C header file i.e. stdio.h.

1.1 scanf() function:

The **int scanf(const char *format, ...)** function take the data from the standard input stream **stdin** and read that input according to the format provided.

int scanf("Control string/format string",&arg1,&arg2,.....,&argn);

In the above statement control string is specify the data format of value which we entered. The scanf() will return an integer value so that the return type of scanf() is int.

scanf("%d %d",&a,&b);

In the above statement control strings are %d which specify the integer value. The scanf() will return 2 because we are reading two integers from the input device.

The return value of scanf() is equals to number of values to be read from the standard input device.

1.2 printf() function:

The **int printf(const char *format, ...)** function writes the data as output to the standard output stream **stdout** and generate the output according to the format provided.

int printf("Control string/format string", arg1,arg2,.....,argn);

The format can be a simple constant string, but you can specify **%s, %d, %c, %f, etc., to print or read strings, integer, and character or float** respectively. There are different formatting options available which can be used based on requirements.

In the above statement control string is specify the data format of value which we entered. The printf() will return an integer value so that the return type of printf() is int.

int a=10,b=20;

printf("%d%d",a,b);

In the above statement control strings are %d which specify the integer value. The printf() will return 4 because we are printing 4 digits(1020) on the output device.

1.3.Simple Printing:

In the simplest case, printf() function takes one argument: a group of characters to be printed. This string is framed by a group of characters, each of which is displayed exactly as it appears. The following example will simply print an H, then a E, then a L, then a L,and finally a Q. This is not exactly same as "formatted" printing, but it is still the basis of what printf() function does.

printf("HELLO");

II SPECIAL CHARACTERS

There are certain characters in C that represent special meaning when preceded by a backslash for example, newline (\n) or tab (\t).Here, you have a list of such escape sequence codes.

Table no 1. Special Characters

Escape sequence	Meaning
\\	\ character

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An Incredible Multitasking Resource Algorithm For Real Time Embedded System Applications

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Abstract: *Now a days, the scheduling plays key role in Real time Embedded systems. It brings automation in many areas and gives more reliability and sensitivity. Scheduling is the process of getting plan to prepare a schedule dynamically and share resources effectively. It makes all hungry calling bodies for resources to reside under compromise environment and avoids conflicts by generating the different instruction to those bodies. It is very useful in all deadline areas where peoples face struggles and cause deaths. The passenger, who ensures their journey in train, may experience many problems (when the train is on moving) due to unavailability of crew person and his resources and some time's leads to harm. In this paper an Internet of Things (IoT) based system is used to introduce automation concept in catering and even to provide extremity issues to the passengers the passengers in moving train. It consists of raspberry pi as a server for maintaining the database and provides wireless communication in between the passenger and crew member. A user Interface provided in each compartment is used to send the requests from passenger. A smart phone is held with the all crew members is to get resource list. The Composite Scheduling for multitask (CSM) Algorithm is responsible for fairly distributing resource list to the crew members continuously.*

Index Terms: *Crew member, Composite scheduling for multitasking (CSM) Algorithm, requests list, Resource/service list.*

I. Introduction

Now a day's, many people in the world, are ensuring train journeys for transportation. Globally, our nation is the second largest populated country and stood on fourth place in utilizing the train transportation. Generally the passengers are used to stay in the railway station to catch the train. In future, the crowd will be increased and this steady growth will shows the negative impact on passenger comfortable journeys. The passenger who resides in the moving train; they cannot be satisfied with the services provided by a crew person because of his unavailability. a recent economic survey was stated that, the productivity in such railway network is low. The major cause is either of longing action or negligence of crew person. It also stated that, the railways department needs to take responsibility to Introduce the automatic resource technique to provide the safety and comfortable journeys to the passengers in the railways. The service quality is poor because, lack of management, dependable communication, and confirmation. So, these problems are encountered in the existing system. The Internet of Things (IoT) [1] is a new technology and it plays the major role in network computations, Wherein all devices are interconnected and one can control the process/task from anywhere through the internet. In its Paradigm, all connected devices have unique identification so that, dependable communication can be possible without conflicts and collisions. In this paper an IoT technology is used to issue resources to passengers. Each and every compartment has separate IoT set up and one among them will be acted as master. The user can make the requests through the web link. All the requests are gathered at the raspberry pi [6] and it again forwards to the server with the help of built in Wi-Fi module. A router is placed in each coach/compartment. The CSM algorithm creates the optimized resource list and server distributed the resource list to all crew members effectively.

II. Motivation to automation in railways

Existing systems:

There are some reasons to encourage the automation in the railways.

1. Normally, when the train is at stationary at railway station, will make a phone call to rail administrator number (given on the ticket) for getting the required resources. The crew person is one who actually provides a resource to users. The rail admin is the person who dwells behind the screen in contribution of the users' resources from crew person to passengers. When he knows all requirements of the user and will distribute those requirements to the crew person by giving instruction and he will serve the resources to travelers. Each and every crew person will receive instruction to do different tasks. The rail admin has to ensure about the crew persons status, i.e. whether any crew person is free or engaged. If he is free, then the rail admin will assign task else he will search for another crew person to assign the same task. There will be some situation like, when all crew persons were engaged with some tasks, and then the rail admin has to provide service compulsorily. Therefore, the existed servicing style is time taking process and this system will give more inconvenient to the travelers in the train and also it affixes the more cellular cost.
2. The rail admin needs the Information about the crew person's location to assign the tasks accordingly. In order to know his status as well his location the admin has to establish the wireless connection to him (crew person) with a walkie-talkie device. This hand held devices are operated with some specified range of frequencies.

STRATEGICAL COMPARISION OF PLACEMENT AND ROUTING IN VLSI DESIGN USING OPTIMIZATION ALGORITHMS

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Abstract: As technology advances at a rapid pace in the field of VLSI physical design, the maximum number of transistors and modules nust be integrated within the comparatively small range. The aim and goal of physical design placement is generally to reduce the silicon :hip area. Hence Optimization approach is considered for placement and routing strategies to achieve best solution. Most of the optimization echniques adopted nowadays are either nature inspired or evolution-based. These methods of optimization take important attributes from our problem and use them as the variables in their algorithms to produce better solutions. Several algorithms such as Greedy Nearest Neighbor, Simulated Annealing, Ant Colony and Genetic Algorithms have been investigated in the present work to optimize processing bloc This investigation has been carried out by using MATLAB software with optimization tool box using Travelling salesman problem.

Keywords: Optimization, Placement, Greedy Nearest Neighbor, Simulated Annealing, Ant Colony and Genetic Algorithms.

. Introduction:

Physical Design is considered as a crucial step for evaluating layout of circuit models and various other specifications like temporal and ogical circuit design.As placement and routing processes are of much significance in VLSI design to attain the best solution i.e. less time. Thus the problems in placement and routing may arise due to intermittent issues and non availability of computational blocks present in the /LSI Design issues. These problems may lead to design abruptions and the final outcome may lead to redundant in placement and routing. n order to avoid these related problems in these VLSI systems Optimization approaches are adopted.

Optimization refers to obtaining the best possible solution for a problem by giving group of limitations (or constraints). The Optimization elated problems are very common in most of the real time disciplines and domains. In optimization related problems, we have to obtain ptimal or near-optimal solutions with respect to some preferred goals. More often than not, we cannot solve problems in one go, but have to ollow some method which directs us through for problem solving. Most often, the process of obtaining solution is broken into number of :eps which are executed one by one. Commonly the steps are recognized and define the problem, construct and solve the prescribed model, nd evaluate and implement the solutions.

ectively and objectively, the research work is carried out and analyzed, the results of the subjective approach support the discussion of ie r s I.E Computational blocks plank and a better optimal solution, while the objective approach clarifies the statistical and graphical omparison of existing methods.

. Significance of Travelling Salesman Problem (TSP)

In this work we wishes to use travelling salesman problem which is the backbone for this research to get optimized solution. This is an otimization problem which is used to acquire shortest path to journey through the given number of cities [8]. Travelling salesman problem ates that given a number of cities and with their distances, the traveler is to go through all the cities only once and back to the city from here he started and minimizing the cost of travel. In simple words it can be explained as a salesperson has to make a visit of all places with condition that he has to go to a place only once and come back to his origin such as to calculate how much time has been spent to visit each ace. This path is described as the tour and the path length is prescribed as the cost of the path [9].

Optimization Algorithms

1 Greedy Nearest Neighbour:

Algorithms intended to optimize issues usually follow sequence of steps, with some number of decisions at each step. The greedy algorithm ways chooses the option that at that time seems to be the best. That is, it selects a local optimum value with a hope that the selected choice ill lead to a global optimum solution. The Greedy algorithm, however, does not always provide an optimal solution, but it will provide the lution for many problems. The Greedy Algorithm requires step-by-step decisions without returning to the same state. The choice on each ep is to enhance the present state in a narrow-minded (myopic) manner without thinking about the worldwide scenario.

A REVIEW OF VARIOUS ALGORITHMS IN BRAIN TUMOR SEGMENTATION

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Abstract: Brain is the most vital and indispensable organ of the human body. The control and coordination of the various crucial structures is completed by the brain. The tumor is shaped by the uncontrolled increase of cell segmentation. A few strategies were created to identify and portion the brain tumor utilizing a few segmentation calculations, for example, 1) watershed calculation, 2) k-implies grouping, 3) Fuzzy c-implies bunching is completed. This is the successful calculation where segmentation of tumor is done and its highlights, for example, centroid, edge and zone are determined from the sectioned tumor. To recognize the brain tumor, examined MRI Images are given as the info. The work required here causes in restorative field to recognize tumor and its highlights helps in giving the treatment procedure to the patient.

Index Terms - Brain Tumor, Classification Algorithms.

I. INTRODUCTION

Today there is an increase in interest for setting up of an Automatic Medical Imaging system that can screen a large number of people for life threatening diseases, such as cancer and brain tumor. Brain is one of the vital organs in the human body, which consists of billions of cells. The abnormal group of cell is formed from the uncontrolled division of cells, which is also called as tumor. Brain tumor are divided into two types such low grade (grade1 and grade2) and high grade (grade3 and grade4) tumor. Low grade brain tumor is called as benign. Similarly, the high grade tumor is also called as malignant. Benign tumor is not cancerous tumor. Hence it doesn't spread other parts of the body. However, the malignant tumor is a cancerous tumor, it spreads rapidly with indefinite boundaries to other region of the body easily. It leads to immediate death.

Medical image processing plays a key role in analyzing images acquired through different image diagnostic methods. Image enhancement and segmentation methods stand at the leading position in digital image processing (DIP) applications.

MR sequences:

Magnetic Resonance Imaging (MRI) is regularly utilized for brain tumor examination and investigation. An assortment of MR arrangements exists, where every one of them is reasonable for various imaging reason. These days, it is a typical practice in programmed investigation to utilize a blend of a few MR successions to accomplish increasingly important and exact outcomes. In this work, three diverse MR successions, to be specific T1-weighted images, T2-weighted images, and FLAIR images, are utilized and they will be portrayed in a matter of seconds as depicted.

T1-weighted image:

In MRI, T1 alludes to the time that protons inside a tissue need to come back to the underlying polarization state, which is given by the static attractive field. Straightforward T1-weighted images (in the blink of an eye T1 images) give preferable anatomical subtleties over T2-weighted images however they for the most part don't bring fascinating data when brain tumor is researched. Be that as it may, they are utilized in a blend with differentiation operator liquid, which is infused into patient's vascular framework. The difference operator features the blood stream in T1-weighted images.

T2-weighted Image:

T2 refers to the time that protons perturbed into coherent oscillation by radiofrequency pulse require to lose this coherence. T2-weighted images (shortly T2 images) are, compared to T1 images, more sensitive to the content of water and, therefore, to the pathology, which, as well as cerebrospinal fluid (CSF), appears hyper-intense here.

FLAIR Image:

Fluid-attenuated inversion recovery (FLAIR) is a succession that can stifle liquids and it is utilized to smother CSF in brain imaging. This impact empowers to recognize sores, which remains hyper-exceptional as in T2 images, from CSF which moves toward becoming hypo-serious here. Therefore, it is ordinarily utilized in the brain tumor imaging. A correlation between T1, T1C, T2 and FLAIR images with tumor present is delineated in Fig. 1.1. Note the hyper-intense dynamic tumor in T1C images, hyper exceptional tumor in T2 and FLAIR images, and hypo-intense CSF in FLAIR images. In MR Images, it is sometimes difficult to differentiate between specific tissues and cells from the rest of the image. Hence, Image Segmentation is used - manually or automatically partitioning the image into a set of relatively homogeneous regions

Validation of SOC-Based Hardware IPs with Diagnostic Software

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Abstract—Diagnostic software is used in post silicon validation to validate SoC based hardware IPs automatically. Post-silicon validation has become one of the main goal in industries is to detect the bugs and remove them and also it is hard-to detect the rarely- occurring bugs that have slipped through pre-silicon verification. During the bug materialization while execution of unnatural random tests may be masked or not able to observe from the test outputs The ability to evaluate the bug-masking rate of a test provides great value in generating or effective tests are performed for high coverage deterioration by this also sometimes it is not able to find the bugs. To end this type of problems, an efficient method is to be proposed, automated diagnostic software development that can be used in post-silicon validation to validate various SOC based hardware IPs like, UART, DMA, IIC, GPIO, Timers and many more. Test cases are being developed by using C/C++ programming. The test cases can be executed randomly, rigorously, regressively can also be used to perform stressing especially on respective functionalities or IP features. This might help in finding the bugs at SOC IP level hitting every corner cases etc. And the same software can also be used across the platforms, so that development time comes down, hence reduction in production cost.

Index Terms—Post silicon verification, pre silicon validation, UART, IIC, GPIO, SPI, ARM based development board.

I. INTRODUCTION

In semiconductor industries, the major cost involves in scheming and manufacture the IC die, sometimes while making of the die, it may cost in millions of dollars. If any bug propagates after making the die, it will impact huge loss to the industries. Hence, before making the first piece of IC, it is required to verify the silicon design or a particular IP design thoroughly before release to the market. The silicon industry follows this verification into various stages; broadly they are classified as verification and validation.

Verification is a process of testing the design against a given requirement before sending the silicon for production. This can be done using several methods like software simulations, synthesis, static formal analysis and FPGA/hardware emulation. During this verification the IPs are validated on FPGA platforms not on actual CHIPS/Silicon.

Validation is a process of which verifies a real silicon or a particular IP's intellectual property, for all its specific functionalities and electrical correctness in a lab set up. Here the validation is performed on original chips.

The main advantages of using these SOCs are miniaturization size, reduces the cost, Shipped with high margin and reduces time to market. SOC is used in various well-known products such as cell phone, digital multimedia players, game console and other consumer electronic devices.

EXISTING SYSTEM

In the current problem-solving environment IPs are validated physically, validation is not automatic. There is possibility of gone astray bugs in SOC IPs. Time to market is taking more time, due to labor- intensive efforts as these tools, are dependent on individual efforts, finding the number of bugs depends on the skill set and forbearance of engineer while running manual tests cases so, there will be missing the some of the bugs. To accomplishment over this kind of labor-intensive efforts a Automated Diagnostic software development for SOC based IPs post silicon validation is anticipated

PROPOSED SYSTEM

Advance technology in semiconductor enables us to integrate billions of transistors in a single chip. This ever-growing complexity pose a demanding problem for SoC based microprocessor or microcontroller design verification and attainment coverage closure within levelheaded time is becoming immensely very difficult to detect the bugs. High-end SoC based microprocessors often include multifaceted features (e.g. in transactional memories, security enhancement, signals and multiprocessor memory consistency) that are hard to verify in the early stages of verification. Therefore, post-silicon validation, that is, the validation effort carried out on the first silicon prototype, aims at catching all the remaining bugs that were not detected in the pre-silicon stage.

Therefore, post-silicon validation, that is, the validation effort carried out on the first silicon prototypes, aims at catching all the lingering bugs that were not detected in the pre-silicon stage.

This aspect makes bug detection and diagnosis challenge automatically. Even more significantly, bugs may manifest during a test's execution, but become masked and go unobserved by the time the test completes. During these situations the precious prototype's execution cycles are shattered. The types of tests deploy in post-silicon validation vary widely, from application scraps, to compatibility tests, to embarrassed random tests. These latter ones are particularly valuable in trying to exercise corner-case scenarios, since a vast number of variants can be generated with little designer's effort. One additional assistance that they bring to the validation effort is that they can often be engender directly in the

DESIGN AND ANALYSIS OF LOW POWER LOW NOISE AMPLIFIER FOR NEURAL RECORDING SYSTEMS

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Abstract: Neural signal recording is essential in the design of an efficient brain machine interfaces and to interpret human neurophysiology. In order to record the signals from numerous neurons, multichannel micro electrode arrays have been developed. Here is the need to use electronics to read neural signals via electrodes. System's dynamic range is usually constrained by back ground noise, which changes over time. Thus, low noise design techniques are favored in the design. In this paper, low power low noise amplifier design is presented for recording EEG signals. Differential pair is used as input stage for achieving the low input referred noise. The bandwidth of an amplifier could be adjusted to record neural spikes or the local field potentials (LFPs). Power give noise is also rejected by Differential input pair. The obtained gain of the amplifier is of 53.7 dB with an tunable band width of 1 Hz to 1.1KHz. And the noise is measured as $537nV_{rms}$ when operated with 1V. The amplifier is synthesized in 180nm technology and simulated using Tanner EDA tool.

Index Terms: Amplifier, low noise, low power, neural recording and brain machine interface.

I. Introduction

For understanding the working of brain, continuous record of neural signals is necessary. For obtaining this large scale multi electrode systems were built [6][10].Such systems helped in conducting various experiments and proved that prediction of limb movements can be achieved by recording neural signals from multiple sites simultaneously and analyzed. As an example a paralyzed person can move wheel chair or a computer cursor using thoughts and to perform such tasks brain machine interfaces are built. These interfaces not only help in monitoring brain activities but also help immovable and physically handicapped people [3][5].

The fundamental stage in the brain computer interface is a neural signal amplifier. The alerts recorded from the outside a part of the brain are very weak and more susceptible as noise since they usually lie between 10μV to few hundred μV. In order to process these signals amplification is needed. In future, there could be a huge demand for implantable recording processes, which require a massive number of neural amplifiers [1][2]. For these applications, to attain longer battery lifestyles, minimized heat dissipation, an ultralow power operation could be very important. The noise referred to the input of the amplifier must be low for clear recording of neural signals and also it should be kept lower than the background noise associated with recording site. The variations between the low vigor and low noise designs should be accurately addressed by the designers. Power of a thermal noise limited amplifier having constant bandwidth as well as the supply voltage measured as (1/2) Vn, where V_n is the input referred noise. As a result, the rate of vigor steeply rises to attain low noise performance. A number of amplifier designs for recording neural signals have been suggested within the literature and most of them for a bandwidth of 5-10 kHz, for an input referred noise of about 5μV, the consumed power was of round 100μW. The amplifier design described in [7] performed 2.2μV of input referred noise and consumed 80μW of power and the band width obtained to be 7.2 kHz.

The power consumption of a neural amplifier will become a limiting factor in a multi electrode array neural recording system. If such amplifiers consume power approximately100μW per amplifier when in use, then overall power consumption o a system will be much more. In order to avoid this bottleneck a new micro power amplifier design has been proposed. This design keeps the power of the amplifier low enough with the intention of reduce the total power consumption of multi electrode recording system. Various neural amplifier design techniques are proposed for investigation.

There is good interest in a quality upward thrust in interest in applied technologies for neuroscience and also in neuroprosthetic applications. These always ask for power recording of neural signals from a number of neurons. An assortment of changes is found in MEMS science over a period. It has catalyzed the fabrication of

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RF ESTABLISHED ADOLESCENT SAVING SCHEME FROM BORE-WELL

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ABSTRACT:

The undertaking factors in outlining a pipe mountain climbing Robot that's labored utilizing far off from a faraway region remotely using RF innovation.

The look of recent fast innovation and the developing PC Capacity gave sensible hazard to new robotic controls and acknowledgment of new techniques for manipulate speculation. This specialized change together with the requirement for superior robots made faster, more specific and cleverer robots using new robots manipulate gadgets, new drivers and propelled manage calculations. This undertaking depicts any other prudent association of robot manage frameworks. The exhibited robotic manipulate framework can be applied for numerous superior mechanical applications.

The modules inside the venture are: RF modules for constructing up faraway correspondence, Robot that's healthy for hiking the pipeline, DC engines is appended to the robot for the improvement of the robotic and Microcontroller which plays out the controlling duties of Robot hiking the pipe line.

The controlling gadget of the complete framework is a Microcontroller to which RF module; DC engines of robot arm are interfaced through an engine driving force. At whatever point the proper keys are squeezed within the Smartphone software, the data recognized with the ones keys will be transmitted over RF module. These facts may be gotten by outdoor RF module at robot arm and this data is endorsed as contribution to the controller. The Microcontroller assessments the information with this system installed in it and performs becoming activities at the robotic arm. The Microcontroller is customized utilizing Embedded C dialect. The Live sound and video transmit to the recipient segment utilizing faraway AV Camera.

Keywords — Poetry, Transcendentalism, Rabindranath Tagore, Walt-Whitman, Gitanjali, Leaves of Grass, Differences.

INTRODUCTION

An inserted framework is a PC framework intended to perform one or multiple devoted capacities frequently with ongoing registering limitations. It is installed as a function of a total machine regularly together with gadget and mechanical elements. By differentiate, a widely useful

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A proposal on automatic segmentation and detection of malignant leucocytes in microscopic blood smear

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Abstract: This paper covers an investigation on the various segmentation techniques employed for the statistical estimation of Leukocytes from microscopic blood samples. Detection and analysis of Leukocytes plays a very significant role in the early identification of Leukocyte cancer. Generally blood images are investigated by pathologists to identify whether the cell is cancerous or not. But this manual method has few drawbacks such as time consuming and accuracy depends up on the operator's skills. This investigation is error prone. So, the fast and effective imaging techniques were developed for diagnosis of patients where they extract information from the microscopic images. This paper mainly concentrates on the detection and segmentation of Leukocytes using various segmentation techniques.

Keywords: Leukemia CLAHE, Otsu Thresholding, K-means Segmentation, ACO, Cuckoo Search (CSO), SIFT.

1. Introduction

The images of blood cells can allow the evaluation and detection of various ailments such as anemia, leukemia etc.. Leukemia is a most dangerous cancerous disease usually affected on Leucocytes (White Blood Cells) .The operation of detection is performed by analyzing WBCs which is considered as the area of research interest in this paper.

This Leukemia is dangerous if it is not diagnosed in the early stages because it spreads quickly into the essential organs and whole body parts by damaging each and every part slowly without giving any symptoms most of the times. Based on the behavioral characteristics and expansion stages of leukemia, it is classified in to two types they are acute leukemia and chronic leukemia. AL (Acute leukemia) is again divided in to two subtypes such as ALL (Acute Lymphoblastic Leukemia) and AML (Acute Myeloid Leukemia).All these ailments commonly affect the lymphocytes of children and adults which are above 50 years old. To save the lives of cancer effected person early detection of Leukemia is very important [1]. Detection of ALL (Acute Lymphoblastic Leukemia) depends on morphological recognition of leucocytes by stream cytometry and microscopy. The preliminary characteristics of various diseases can be identified by pathologists (professionals) with diagnostic procedures [2]

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Research paper

Leukaemia Detection in Microscopic Imagery using Optimization Algorithm

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Abstract

In this paper, automated approach of blood cancer detection is proposed. Usually microscopic images examined by experts manually are time consuming and less accuracy. The automated blood cancer detection system analyses the microscopic image and overcomes these drawbacks. The proposed system extracts the features of the image and applies filtering techniques. In this paper proposed method is cuckoo search optimization algorithm which is used in line with segmentation. The features of segmented image can be obtained from Scale invariant feature transform. Some of the features like PSNR, sensitivity, accuracy, etc. are calculated for leukemia detection. The performance is compared with the existing method ACO. The proposed system is tested on image dataset and 94.24% accuracy is achieved. The proposed system is successfully implemented in MATLAB.

Keywords: Leukemia CLAHE,Segmentation,Cuckoo Search(CSO),Ant Colony optimization(ACO),SIFT.

1. Introduction

Leukemia is one type of blood cancer. It is caused due to the uncontrollable growth of white blood cells and decreases in neutrophils cells count. Various methods are used to diagnosis Leukemia. Generally the Bone marrow smear images are composed of the various complex items. The proliferation and maturation of blood cells occur in the marrow only. It is known that the blood cells in a marrow smear can have different sizes and shapes [1-2]. To study the irregularities and to distinguish cell classification a greatly skilled resources are needed.

One of the traditional methods to detect the existence of blast cells that causes Leukemia can be attained through the microscopic observation by the hematologists in medical research. This method of examinating the existence of leukemia through traditional microscopic observation is very time consuming, costly and monotonous. At present these methods to investigate the Leukemia do not fulfill the exact requirements. Hence a new approach is very essential which is free from the influence of the system operator fatigue. There is a need of cost effective and robust computer aided system which improves the reliability and efficiency of the leukemia diagnosis [3]. Now a day's digital image processing techniques are implemented in automated systems for medical diagnosis. Digital image processing affords an opportunity to extract significant and treasured information from an image. Digital Image processing technique is used to detect cancer in white blood cells (WBC) and it is also implemented to characterize the behavior of blood cell nucleus. DIP is a novel approach in identifying the cancer as it is cost and time effective in comparison to traditional microscopic method. For an affective detection of cancer through DIP technique, the basic and key requirement is to segment the WBC in systematic manner. Literature on image segmentation is available. [4]. An efficient and quiet approachable method for WBC and their nucleus segmentation is the Edge detection technique [5][6].

In general an image is a composition of RGB colours. It finds difficult to process this composed RGB image. Hence a color conversion is needed for pre-processing of the image. In this connection, various color space conversion is used for segmenting white, red blood cells and the platelets. [7][8]. Traditionally there are several segmentation methods like Adaptive thresholding, Otsu segmentation, K means Clustering etc...

From the literature review it is observed that the segmentation accuracy of the traditional methods is less. To improve the segmentation accuracy optimization techniques are used for detection of cancer in white blood cells. This paper introduces a novel segmentation method named Cuckoo Search (CSO) optimization algorithm to segment the blast cells in microscopic images.

This Paper is structured as follows. Section-2 depicts the proposed method whose subsections discussed about image pre-processing method, Cuckoo search algorithm for segmentation of microscopic image, SIFT (Scale Invariant Feature Transform) for feature extraction and attribute calculation for segmented cell. Section-3 depicts the statistical comparison of obtained results from Ant colony optimization and Cuckoo search optimization. Finally, Section-4 presented conclusion.

2. Methodology

The main intension of the proposed work is to fragment the WBC in cancer (leukemia) and normal condition from the acquired stained peripheral blood film of microscopic image. The interconnection among WBCs is different in these two conditions where they are isolated from each other in course of normal condition and due to existence of blast cell they are connected in course of leukemia. Hence, a novel algorithm has been evolved such that it separates WBCs during leukemia and does not obstruct the effect of separation process during normal condition. In proposed method the noise is removed by median filter and RGB microscopy image is converted in to grayscale conversion

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RESEARCH ARTICLE OPEN ACCESS

Automatic Guidance System for Office/High rise buildings

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Abstract:

When a person enters into a building or office he may not know the way to reach his/her required place. In that situation he/she needs to ask other persons to find the way to reach his destination and it may consume some time. This work explains how the automatic guidance system helps the person to find his own way easily without asking anyone. The automatic guidance system can guide the person in such a way that when a person enters into a building, sensor will detect the motion of that person. This sensor may be PIR (Passive Infra-Red) sensor or RFID (Radio Frequency Identification) or any Object sensor. The sensor detects the object and sends a signal to the controller kit through Zigbee or Wi-Fi. The controller is basically a tiny microcontroller 80518952 or AVR (Alf and Vegard's RISC) which is programmed to execute the required operation at a required time. The guidance can be path defining in day/night conditions by an indication as a buzzer/light illumination with the help of LED display.

Keywords— Sensor, Microcontroller, Battery, Zigbee, LED display.

I. Introduction

The automatic guidance systems are already existed in several fields like agricultural field machinery, form tractor, industry, docking systems etc. In the existed system indicate the directions. In this proposed system all the components are connected to power supply. Low power consumption is one of the objective of this proposed work.

For power consumption we can connect a battery or SMPS (Switch Mode Power Supply). The battery may be a 9V battery which has trustworthiness up to one year. For long period trustworthiness we can use SMPS. But this SMPS can be used only at the power points present in the building. Another substitute is renewable energy source like solar power supply can be made the automatic guidance is used to know the field conditions and to find the position of agricultural vehicle. But in the proposed system the automatic guidance is used to

use of, depending upon the convenience and cost effectiveness.

AVR is a family of microcontrollers industrialized by Atmel startedin 1996. These are reformed Hardware architecture, 8-bit RISC single-chip microcontrollers. It was one of the first microcontroller familiesto use on-chip flash memory which is used for program storage, as unlike from one-time programmable ROM, EPROM, or EEPROM used by other microcontrollers at the time. The AVR is programmed in such a way that when it collects the signal from the detector, the LEDs (Light Emitting Diodes)

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SMART CAR PARKING INFORMATION SYSTEM

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Abstract:

With the increase in vehicle production and its usage, more and more parking spaces and facilities are required. As the cost is affordable now, most of the people are owning cars and the main problem is the parking in shopping malls and the market places. For parking, searching a suitable place has become a cumber some job and a lot of time is wasted for checking each and every gap whether our car can sufficiently be parked in that particular place. To easy the problem, an electronic device is designed which is used to detect the empty space by scanning in the parking area nearby suggesting the availability of parking slot. In this paper a new parking information system called Smart Parking Information System is proposed to assist drivers to find vacant spaces in a car park in a shorter time. The new system uses infrared sensors to detect car park occupancy.

Keywords: Parking, Infrared sensors, microcontroller.

1. INTRODUCTION

Time and cost are two important factors of human life, whether for an individual or a business. As quality of life increases, more and more people inhabit cities. Urban life requires centralized public facilities. Shopping complexes are an important point of interest both for a city's inhabitants as well as for visitors. With the emergence of modern shopping complexes which provide a variety of services, more and more people are attracted to visit them. Hence, more shop owners prefer to locate their business in shopping complexes to target more customers and increase revenue.

Recently, shopping complexes have begun providing services much more diverse than just pure selling and buying. Customers can use banking services, post offices, food courts, cinemas; children's play areas, and so on. The growth of shopping malls has

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RESEARCH ARTICLE OPEN ACCESS

An Autonomous Wireless Implementation of IOT based Healthcare Applications

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Abstract:

Internet of things (IOT) is a wireless network which interconnects devices for sharing data and information and producing a new information which is stored and can be analysed in future whenever required. TheIOT plays a vital role in medical field in providing services to patients and doctors. The idea of this project is to send the health status of patient in which includes blood pressure (BP), heart rate, and ECG directly to the doctor without attending the hospital. This model consists of a system which communicates between network connected systems, Applications and devices that helps the doctors and patients to monitor, track and record patient's vital data and medical information. We are implementing this model o the Raspberry pi zero which uses ARM1176JZF-S ARM core processor and software includes Python which is needed to program Raspberry pi zero which was used to upload our final code of maintaining a database. By using this system doctor can examine his/her patient's current health status and full medical information from anywhere and anytime.

Keywords: Raspberry pi, Internet of things (IOT), Smart Sensors

I. INTRODUCTION

In our day to day life we are facing many health problems because we are not caring about ourselves.An average 6316 people are dying all over the world for a day. To overcome such problems we are introduced a IOT Based Smart Health Care kit which included smart sensors to receive information with respective human body temperature, blood pressure, saline level, heartrate,ECG etc,that will be transmitted on an monitored& analyzed by the doctor, whenever it'srequired. These databases are stored on server permanently and can be reset via the software. This paper proposes a health monitoring system which is capable of detecting health parameters of our body such as blood pressure, temperature, heart rate, ECG& further transmitting on an IOT server

RESEARCH ARTICLE OPEN ACCESS

IOT Based Security System For Women And Children Safety

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Abstract:
The main aim of the project is to provide security for woman and children. The purpose of the project is to provide security for women and children. Women or child will be provided with a equipment which is not visible to others, the equipment consists of GPS (Global Positioning System) module by which we can get the geographical position and these location values are displayed on the LCD (Liquid Crystal Display). In the case of any emergency conditions she can press a button, the microcontroller sends latitude and longitude information to authorized persons through WI-FI, then the location information will be tracked and sent to police and family members so that she will be rescued in proper time and we can easily trace out the kidnapped women or children with the GPS location and this system gives voice alert to the surrounding people.
Keywords — GPS, Wi-Fi, Emergency switch, Voice playback module.

I. INTRODUCTION

The mischievous activities against children and ladies are expanding step by step. They are under the danger of effortlessly being seized. In such hazardous circumstances there must be a system that is effectively moderate to deal with those circumstances. Subsequently this framework consolidates the two GPS [2] and WI-FI innovation to give a submit such circumstances. The GPS is utilized for distinguishing the areas and WI-FI is utilized for sending them as a message[1].

Global Positioning System (GPS): GPS receiver is a route framework. It works in light of satellite signs. It pinpoints the land area of itself. The GPS satellite pivots around the earth and transmits signs to the earth [5]. These signs are gotten by the GPS beneficiary to compute client's correct area utilizing the technique called "Triangulation". In triangulation the correct position can be processed in 2 measurements and also in 3 measurements.

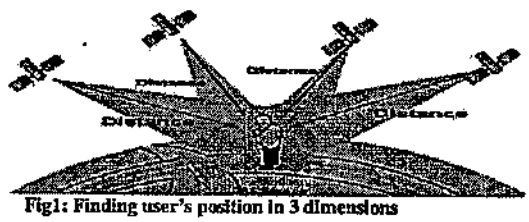

Fig1: Finding user's position in 3 dimensions

Exact calculation of Time and Position: Keeping in mind the end goal to figure its position and time, the space based GPS beneficiary gets the time stamp or time on nuclear clock, satellite's position and entry time at various focuses from the satellite which are all in see [3]. From this data the separation between those satellites are precisely processed by GPS beneficiary. It likewise computes the speed and speed.

II. LITERATURE REVIEW

By the investigation of missing children in 2004, There are of total 5996 Childs are truant, Out of these selective 4092 children found by police. However 1904 adolescents are missed. Today, GPS has a broad assortment of employments including following group movement [8], adaptable business, and emergency response. GPS [7] contains an arrangement of 24 satellites in 6 particular 12-hour orbital ways scattered so that no under five are in context from each point on the globe. Short Messaging Service (SMS) is a segment available on every single cell phone which allows somewhat substance to be sent between one customer and another. Tyke following system will track advancement of their tyke while going to class and

RESEARCH ARTICLE OPEN ACCESS

OPTIMIZATION OF FLOORPLANNIG IN VLSI USING BIO-INSPIRED ALGORITHM

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Abstract:

Floorplanning —In VLSI Physical Design process, Floorplanning is an important step because it is an operative resources to bring about circuit design complexity, in which there exits an increment with the development in technology. Floorplanning comprises with defining places, size, shape of the modules in a chip and Floorplanning can be able to estimate the chip area, wiring congestion, and the delay. Floorplanning yields a ground work for layout. Computationally Floorplanning is considered to be a NP-hard problem. In order to solve VLSI Floorplan problem so many researchers recommended several heuristics as well as meta-heuristic approaches. In Floorplanning Stage the Floorplan illustration is one of the important part. Illustrations have an excessive effect on the difficulties of Floorplan design. Here in this paper, an assessment is given to the Floorplanning problem in VLSI that comprises the studying and relating the changed optimization algorithms as well as the illustrations involved in the Floorplanning problem in VLSI.

Key words —Very Large Scale Integrated Circuits (VLSI), Floorplanning, Simulated Annealing, Particle Swarm Optimization (PSO).

I. INTRODUCTION

The growth in the demand for modern technology in the market leads to more research in the IC design field that results in the development of VLSI design with additional complex, dependable, compressed in addition with improved performance. IC design has turn into tough problem due to the presence of countless number of transistors in a single chip. While designing an IC there will be two stages-Front end and Back end. Floorplanning is present in the Back end. So Floorplanning is a good classified approach to the above mentioned problem. It is an essential step in the physical design of VLSI. The solution space also gets increased with the improvement in circuit design which results in the complexity of finding the global solution space. In VLSI, we integrate thousands of transistors into a single chip for the fabrication of IC. Logical design and physical design are the two design phases. At this point, physical design is the method of defining the active devices physical location also interconnecting them inside the limit of the VLSI chip. The determination of the physical design in VLSI is to provide an abstract description of the circuit which includes the netlist, silicon area, creating a full geometric layout of the IC.

Generally, floorplanning is a two-step process [1]. The design of Floorplan [4,5] is a significant step in the VLSI physical design. It mainly deals with the issues like How to assemble the modules on a chip satisfying the constraint that no two modules overlap each other while controlling the wire length required, area and other performance indices being optimal and it is chosen by Floorplanning[7]. In this paper obtaining the optimization of Floorplanning by using the Particle Swarm optimization Algorithm [3].

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A SMART&AUTONOMOUS WIRELESS SYSTEM FOR PRECISION AGRICULTURE USING IOT

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Abstract:
Automatic irrigation systems are convenient, abnormally for those who travel. If installed and programmed properly, automated irrigation systems can even save your money and advice in baptize conservation. Dead backyard grass and plants charge to be replaced, and that can be big-ticket but the accumulation from automated irrigation systems can go above that. The proposed irrigation ambassador bulge is composed of a micro-processor, transceivers, analog to agenda converters. The analysis ambit can be displayed as ethics in PC. If there are any beat action of ambit (temperature, humidity, moisture), then active will be made. This arrangement makes limited ecology accessible in irrigation applications.

Key words: Raspberry, IoT, sensors.

I. INTRODUCTION

There are abounding systems to accomplish baptize accumulation in assorted crops, from basal ones to added technologically avant-garde ones. For instance, in one arrangement bulb baptize cachet was monitored and irrigation appointed based on awning temperature administration of the plant, which was acquired with thermal imaging[1]. In addition, added systems accept been developed to agenda irrigation of crops and optimize baptize use by agency of a crop baptize accent index. An another constant to actuate crop irrigation needs is ciphering bulb evapotranspiration (ET). ET is afflicted by acclimate parameters, including solar radiation, temperature, about humidity, wind speed, and crop factors, such as date of growth, array and bulb density, administration elements, clay properties, pest, and ache ascendancy [8]. Systems based on ET accept been developed that acquiesce baptize accumulation of up to 42% on time-based irrigation schedule. Automati0063 irrigation systems are convenient, abnormally for those who travel. If installed and programmed properly, automated irrigation systems can even save your money and advice in baptize conservation[2]. Dead backyard grass and plants charge to be replaced, and that can be big-ticket but the accumulation from automated irrigation systems can go above that[3]. Watering with a corrupt or with oscillator wastes water. leither adjustment targets bulb roots with any cogent bulk of precision.Automatic irrigationsystems can be programmed to acquittal added absolute amounts of baptize in a targeted area, which promotes baptize attention aback the deployment.

II. DESIGN AND IMPLEMENTATION

The irrigation ambassador bulge is composed of a micro-processor, transceivers,

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RESEARCH ARTICLE OPEN ACCESS

ANTI THEFT PROTECTION FOR ATM BANKING USING IOT

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Abstract:

We belong to the edge of digitized and smart world. People are getting smarter day by day with the help of new technology, new innovations. Main reason behind the up-gradation of new technologies is nothing but to overcome the existing problems. Economic growth of world makes the life smarter and better as compared to previous lifestyle. A smart step towards economy is the introduction of Automated teller machine (ATM) for faster and easier money transfer. But a group of people do malpractices over this ATM system to put people, organization of bank into a million Rupees of loses. In this project, the system maintains the entry of a single card holder at a time with the help of RFID reader and finger print. If finger print and RFID matches then the person can collect the cash without entering the PIN.

Key words: Digitized, Economy, RFID, Finger print

1.INTRODUCTION

Automated teller apparatus (ATM) is ancyberbanking telecommunication accessory aswell alleged as Banknote machine, which allows the users to accomplish assorted cyberbanking affairs mainly banknote withdrawals. It is about authentic as a Apparatus to Apparatus communication. There are 3 actor banknote machines are installed accepted as per ATM Industry Association (ATMIA) progress. Affidavit is provided by entering a PIN. Now a day in society, the thefts occurring in ATM are top due to the abridgement of able able aegis system. Our activity is aimed to affected the complete problems and to enhance the added aegis akin by introducing the abstraction of PINLESS ATM agenda which restricts the admission of crooked person. If the feel book of a accepting and RFID doesn't match, it will ascertain as crooked person, and again the accepting needs to admission the endure four digits of the registered adaptable amount of aboriginal agenda holder. Again an OTP has been forward to the registered adaptable

RESEARCH ARTICLE OPEN ACCESS

DESIGN OF SMART BIO-METRIC ANTI-THEFT PROTECTION SYSTEM FOR VEHICLES

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Abstract:

Recently vehicle monitoring system is getting full-size popularity because of the growing quantity of the stolen Vehicles. Vehicle robbery is occurring on parking and occasionally driving in unsecured places. This research work explores a way to avoid this sort of stealing and presents greater protection to the vehicles. The carried out system incorporates single-board embedded system which is equipped with global system for mobile (GSM) and global positioning system (GPS) along with a microcontroller installed inside the automobile. The use of GSM and GPS technologies lets in the gadget to track the item and gives the maximum up-up to now records about out-going trips. Moreover, fingerprint verification is performed in the applied machine to make certain the riding of correct individual. The carried out machine is very simple with greater security for automobile anti-theft, safety and low fee method in comparison to others. With the monitoring, we additionally seize the image of the motive force before beginning the car, or in case some wants to thieve the car additionally we capture the picture and send the capture image to cell the usage of Internet. In case of any injuries or tampering of the vehicle we additionally receive a message with the location of the vehicle by way of using sensors.

Keywords—GMS, GPS, fingerprint, embedded system, vehicle anti-theft protection.

I. INTRODUCTION

A vehicle tracking system combines the installation of an electronic device in a vehicle or fleet of vehicle to enable the owner or third party to track the vehicle's location and collect data in the process.A Modern Vehicle Tracking system (VTS) is the technology is used to determine the location of a vehicle using different methods like GSM and GPS module and other radio navigation systems operating through satellites and ground based stations[1]. GSM and GPS based vehicle location and tracking system provides effective, real time mapping based vehicle location tracking[2].

The machine uses geographic position and time statistics from the Global Positioning Satellites. In this research work, a device has been advanced based totally on microcontroller that consists of a GPS and GSM[4]. A manner communiqué procedure is carried out using a GSM modem. This also comprises of a bio-metric protection gadget of the car and fingerprint verification of the driver of the automobile is used to defend the vehicle from anti-theft. Fingerprint reputation or fingerprint authentication can be described as a way of verifying a matching fingerprint currently input between two human fingerprints in an automatic behaviour. Fingerprints are one among many types of biometrics used to identify people and afirm their identification.

It is known that absolutely everyone has a completely unique fingerprint picture. When driver offers his tested fingerprint photo earlier than beginning the car[3], the system might be considered as fair condition. But whilst vehicle's area is changed without fingerprint verification, the machine might be taken as extraordinary situation. Then the system will ship an SMS to owner of the automobile with an URL of 'GOOGLE MAP' having the coordinate of the cutting-edge place of the vehicle[6]. SMS may be then dispatched to the owner having updated region's co-ordinate every c programming language of 10 seconds till doing the proper fingerprint verification. Moreover, automobile's owner can get the automobile's vicinity at any time by way of SMS after making a 'missed call'.

II. LITERATURE REVIEW

In 2015 Akshay Zacharia, Ajo Thomas, Rinto Roy, et.al proposed a sensor based vehicle robbery detection system together with some functions like hearth detection is carried out within the automobile. Two android devices talk with each other one from the car and the alternative is with the proprietor of the car. A password lock is used to control the automobile. When a consumer tries to get right of entry to the automobile the intended uses wishes to be authorized best then the car ignition may be grew to become on. When a user

RESEARCH ARTICLE OPEN ACCESS

AN OPTIMIZED IMAGE FUSION TECHNIQUE FOR NEUROSURGERY

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Abstract:
Medical image fusion is the process of registering and combining multiple images from single or multiple imaging modalities to improve the imaging quality and reduce randomness and redundancy. Image fusion increases the clinical applicability of medical images for diagnosis and assessment of medical problems in neurosurgery. Multi-modal medical image fusion algorithms and devices have shown notable achievements in improving clinical accuracy of decisions based on medical images for neurosurgery. The two stages of any classical image fusion method are image registration and fusion of relevant features from the registered images. The registration of the images requires a method to correct the spatial misalignment between the different image datasets. The problem of registration becomes complicated in the presence of similar image noise, missing features, and outliers in the images. Previously the problems are rectified by using so many segmentation algorithms, but they are not optimized. So in this work a dynamic optimized image fusion technique is proposed where ultrasound (US) and MR images are fused and get a more accurate and very less error probability images which acts as a guide in surgery process.

Keywords: Modalities, Redundancy, Multi-modal Fusion, Registration, Neurosurgery

I. INTRODUCTION

Medical imaging is the technique where it process and creates a visual representations of interior parts of human body which are hidden by the skin and bones for clinical analysis and medical intervention [1]. Today, in medical field imaging draws an additional attention for clinical examination and disease diagnosis because of increased requirements. Present neurosurgery especially for brain tumors or nerves in spinal cord excision has perceived a spectacular change in the use of image information over the past decennium.

Medical images produced by different imaging modalities like MRI, CT and Ultrasound provides data as assortment of balancing information concerning the internal structure of human body. Though, single imaging modality does not provide a high resolution image for diagnosis of disease and visualization in neurosurgery [2]. So to enhance the diagnostic accuracy the image fusion is considered where it integrates more than one imaging techniques and produces fused images which are more appropriate for abet the doctors in diagnosis. [Y].

Among all the imaging modalities US (ultrasound) and MRI has acquired noteworthy impetus in neurosurgery. But, due to having their limitations the registration problem gets intricate in existence of multimodality noise.

In this paper a vibrant optimized image fusion technique is presented where ultrasound (US) and MR images are merged to get more precise images which act as a guide to doctors in neurosurgery process.

II. LITERATURE SURVEY

In 2006, R.Thillaikkarasi *et.al* [3] proposed a novel algorithm based on E-Raptor which acts as guide for neurosurgery. In this work authors considered the US & MRI brain images for fusion. Also in their work local binary patterns & gray level co-occurrence methods as feature extraction and SVM as classification method are considered for detection of tumors or malignant in surgery.

RESEARCH ARTICLE OPEN ACCESS

DESIGN OF A POWER EFFICIENT MULTIPLIER USING REVERSIBLE LOGIC GATES

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Abstract:

Reversible computation is emerging region of research, having applications in quantum technology, Nano technology and low power design. It is proved that reversible logic has reduced less power dissipation. This quite different from the conventional logic of multiplication like add and multiplication. The something aspect of the process going that the develop multiplier architecture. Here the design of multiplier by using different logic gates as proposed. The proposed reversible multiplier is implemented using mentor graphics tools in 130-nm technology is very power efficient. Here power dissipation of proposed multiplier design and conventional multipliers has been compared. Conventional multiplier dissipates the power 50.55nWatts where as proposed multiplier designs dissipate 30.33nWatts respectively.

I.INTRODUCTION

Now- days the main requirements for VLSI chip that are hidden to be kept. The three most important methods to measure the quality of VLSI circuits is the area, power dissipation and high speed. The common multiplication method is add and shift algorithms. The main Para meter that determines the performance of the multiplier. The design of multiplier is based on equally distant from one another at all points. A logic synthesis technique using a reversible gate should have the features like minimum gate count along with to smaller extent uses of constant and garbage generation. In next section we will converseassorted operation. Another multiplier it reduce the less power and it change to the different operations of the in filtering process also we have multiplication.

II.REVERSIBLE LOGIC:

The reversible logic is promising computing design paradigm which presents method for constructing computers that produce no heat dissipation. Reversible computing emerging as a consequence of the meaning of quantum mechanics principles towards the developments of a universal computing are based on the connection between entropy. The basic principle of reversible computing is that a bi-ejective device with identical number of input and output lines will produce computing environment where electrodynamics of the system.The total amount of something refers to the cost the moving around in terms of the orbit of primitive gate.

RESEARCH ARTICLE OPEN ACCESS

Implementation of Latched Comparators in Cardiac IMDs

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Abstract: Cardiac Implantable Medical Devices are used to benefit the patients with tachycardia or bradycardia. Power consumption is important aspect of cardiac IMDs. SAR ADC consumes most of the power which inturn reduces the battery life of the cardiac IMDs. Latched comparator in the ADC plays a major role in power consumption. Therefore it is desirable to implement a low power latched comparator. In this work we have proposed a new architecture for latched regenerative comparator which is suitable to implement in cardiac IMD applications. The proposed circuit dissipates less power when compared with the other existing architectures of latched comparators. In this paper the proposed circuit is simulated using Tanner EDA tools in 45nm technology.

1. INTRODUCTION:

Cardiac implantable medical devices (IMD) are increasingly being used by patients to benefit from their life saving functions. These medical devices are surgically implanted into the patient's body and are configured *by*physicians. Set of techniques have implemented for controlling the heart arrhythms and failed. Finally a cardiac implantable medical device called pacemaker was first implanted in 1958 and functioned for 3 hours.A pacemaker is a small device placed in the chest or abdomen to help control abnormal heart rhythm. This device uses electrical pulses to prompt the heart to beat at normal rate. Modern pacemakers have two parts.one part, called the .pulse generator contains battery and electronic circuits that control heart beat. The other part is leads which contains wires and are used to send electrical signals to the heart. These wires run from the pulse generator to the heart [1,2].

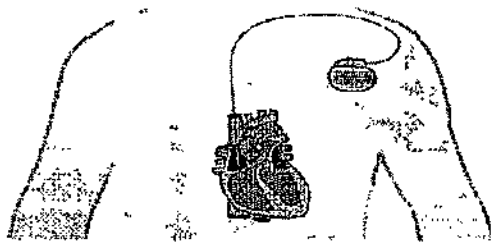

Figure 1: Cardiac implantable medical device-pacemaker

For the long survival of cardiac pacemaker, SAR ADC with low power medium speed and high accuracy must be designed. To maintain the performance of ADC with the given specifications, design of low power dynamic latched comparator is crucial Leakage currents, offset parameters and kick back noise are the various non-idealities that degrades the performance of ADC.

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RESEARCH ARTICLE OPEN ACCESS

CMOS implementation of Different Reversible Logic Gates

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Abstract:
Power is one of the most important factors in VLSI design. Reversible Logic is gaining interest in recent years because of its less heat dissipating characteristics. This logic has extensive applications in future emerging technologies adiabatic CMOS, Nano technology, DNA computing e.t.c. This logic plays very crucial role for the construction of low power structures which are very essential for the construction of arithmetic circuits used in quantum computation, nano technology and other low power designs. Here the CMOS implementation of various reversible logic gates has been proposed. Also the performance parameters such as total power dissipation, delay and slew rate are analyzed for all gates. The simulation process is done by using Mentor graphics Tools with 180nm technology.

I. INTRODUCTION

From the past ten years, the designers have encountered ample problems in the development of conventional design components. The major problem associated with these conventional technologies is the power dissipation which is most important factor in todays IC designs. In VLSI design, the conventional circuits dissipate more power; hence Reversible logic is one of the promising technologies used to overcome this problem due to their inherent capacity to decrease the power dissipation. It is extensively studied and implemented for VLSI designs. It consist different applications like low power CMOS, quantum computation and nano technology. Reversible computing will also lead in improving overall energy efficiency of the system. The advancement of reversible logic technologies have helped in improving the performance of computer architectures. Here we are comparing different reversible logic gates in power, slew rate and delay and determining possible applications in VLSI circuits. Reversible logic circuits have the equal number of inputs and outputs, and have One to one mapping between vectors of inputs and outputs; so that the vector of input states are always restore from the vectors of output states. The important challenges of designing reversible circuits are to lower the number of gates, garbage outputs, delay and quantum cost. Any reversible circuit should be designed with minimum number of reversible logic gates.

II. CMOS IMPLEMENTATION OF VARIOUS REVERSIBLE LOGIC GATES

NOT Gate:

The NOT gate is very simple Reversible gate. It consists of only one input and one output. Quantum cost is zero for Not gate.

Fig1: Not gate

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RESEARCH ARTICLE OPEN ACCESS

Real Time soil fertility analyzer using IOT

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Abstract:

Agriculture plays a vital role in our country. Over fertilization may leads to the inferior quality in the crop production. The measurement of soil nutrients is greatly required for better plant growth and fertilization. A key in soil testing is to determine the amount of nutrients present in soil. PH is commonly measured to monitor the soil fertility. PH is also one of the most important and informative soil parameters to detect the soil fertility. In the proposed system an electrochemical sensor has been developed to determine the percentage of soil nutrients i.e., Nitrogen, Phosphorous and Potassium and also determine the crops which are suitable for the particular soil type. It will analyze soil nutrient content present in soil at real time and it will also suggest the crops based on determined PH of soil. This system is proposed to help the farmers to increase the production and the suggestions are made through the mobile application.

Keywords: Nitrogen (N), Phosphorus (P), Potassium (K), electrochemical sensor, and Nutrients.

1. INTRODUCTION

All types of farming activities like watering fields; cultivating crops with required fertilizers etc. are involved in conventional farming practice are performedmanually. [1] Crop production is mainly depends on the soil and properties of plant interaction. It is a valuable tool for a farmer which determines the soil fertility for better and economical crop production. A proper soil testing will helps to decide the amount of fertilizer to get the proper results of the crop based on the nutrients already present in the soil. A complete nutrient management is done by using the soil testing. Major nutrients present in soil are Nitrogen (N), Phosphorus (P) and Potassium (K).Based on relation between the pH and macro nutrient concentration of soil, we decide the fertility of soil. Depending upon the minerals available in the soil, we can estimate the plant rate of nutrient absorption.

Due to the insufficient rate of nutrients there is degradation in the production of crops. The major requirement of the nutrients for necessary plant growth is known as Macro nutrients. However the better amount of fertilizer is required for better growth. Over fertilization leads to the reduction in harvest production rate. Even today some areas follow the manual fertilization. This type of manual fertilization becomes the soil condition is error prone. Day to day the demand of food production increases rapidly. The misuse of fertilizers results into inferior quality in crop production. Depending upon the type of crop and on plant growth status, the quantity will be decided. Measuring the nutrientsconcentration present in the soil is to get the soil nutrients to be provided and select the suitable crop for multiple times of cropping in the same land. Nutrients and technology plays a crucial role for getting the sustainable agriculture and reducing the environmental impacts and economic losses.

RESEARCH ARTICLE OPEN ACCESS

REAL TIME STREAMLINED MULTITASKING TECHNIQUE FOR SOFT AND HARD DEADLINE TASKS.

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Abstract:

Now a day, train journeys became more often. Many passengers are rushing towards trains for their journey and this leads to an inconvenience to the crew member when he/she serve the passenger requests. The quality of service is very poor because the issue of the service is not completed within less time. In economic survey 2018 it was clearly mentioned that the railway constitution should facilitate concept of automation techniques for servicing passenger's requirements. An IoT system will provide some automation techniques through CSRA (Composite Scheduling Resource Algorithm) algorithm. Scheduling referred as to "when" to do and "what" to do. Thus scheduling algorithm will fairly as well efficiently distribute the requests to the crew members there by the bottleneck inconvenience of crew member will be reached.

I. *INTRODUCTION*

The scheduling is planning about how efficiently utilize the CPUs time. For that IoT based system[1] is involved. Mainly it comprised of smart phone for making and providing services, Raspberry pi 2 model B for scheduling and it will guides the crew members while providing the services. In The existing system, passengers will place the requests by making call to the rail officer with toll free number provided on ticket. But In some territory areas mobile phone signals may not be available so in that area the passenger cannot make the requests and this is one of the major pitfalls of the existing system. Here in each and every compartment one Raspberry pi 2 model B(controller)[8] and among them one will be imitate as master.

The passengers will makes requests with the application provided in their smart phone. The randomly made requests are collected by the controller which is placed in each and every compartment. The collected requests are rearranged and distributes those requests are fairly to the crew members. Here one of the main assumption is the address location of the crew member is under surveillance of the Whenever crew member enters or exit the compartment automatically crew members smart phones Bluetooth beacons are radiated and it will be sensed by the controller there by position of the crew member will be found out if programmed to do so. The main aim of this paper is to reduce time gap between crew member and the passengers. It is possible by assigning the tasks to the crew members such that he can efficiently serve to the nearby compartments. Each and every pi model receives the some requests in their respective compartments and forwarded them to the master when it senses the crew members Bluetooth beacons. The pi model repeatedly transmits those arrived requests to the master. Scheduling and reallocation of the requests are done by the master and also for distributes them to the crew members.

II. *SCHEDULING ALGORITHMS*

Scheduling is the process of deciding which calling process has to obtain the CPUs clock cycles or memory or display unit etc.., this

RESEARCH ARTICLE OPEN ACCESS

Blood Cell Segmentation of Micro scopic Images using K-means Clustering Algorithm with SIFT

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Abstract:

In the field of medicine, the most hazardous cancer is Leukemia. It affects bone Marrow, blood and lymph system. Leukemia is either acute or chronic. Microscopic images are used to detect the blood cancer. Moreover, hematologists are examined all these images which takes more time and causes late detection. Therefore, for early detection of disease an automatic imaging system is setup which includes pre-processing and post-processing that conquers the limitations in visual examination. In pre-processing firstly, the noise is removed by CLAHE. In post-processing, the image is segmented by K-means clustering algorithm and features of white blood cell nucleus extracted by Scale Invariant Feature Extraction classifier (SIFT). In this work, also, the results of proposed method are compared with existing method which includes Otsu segmentation with KNN classifier.

Keywords — Leukemia, Median filter, segmentation, K-means clustering, Scale Invariant Feature Transform.

I. INTRODUCTION

Now-a-days for effective treatment option the accurate medical diagnosis is necessary [1]. Medical diagnosis is a process where it identifies a disease by critical investigation of its symptoms and a sequence of laboratory tests. The most and commonest effected blood cancer in both adults and offspring's is Leukemia. It is one type of blood cancer which affects especially the white blood cells. Generally human blood consists of three cells such as White Blood Cells, Red Blood Cells and Platelets. Each of these cells functions a specific task. White blood cells fights against infections in human body where as Red blood cells transports oxygen from lungs to body tissues and vice versa. Platelets assist for control bleeding by blood clots [2].

In leukaemia affected person too many white blood cells are produced over the normal count which results abnormalities in the cells. These abnormal cells cultivate more and interfere with other blood cells[3]. Due to abnormal growth of cells they are not function properly [4]. In diagnosis of leukaemia the imaging system plays an important role which includes machine learning techniques [5].

In this paper a novel method is proposed where K-means Clustering is used for segmentation and SIFT for feature extraction for the detection of blood cancer (Leukaemia).

II. PROBLEM DEFINITION

Segmentation of Cytoplasm and nucleus is difficult in overpopulated blood smear. In existing method otsu method is used for image segmentation and for feature extraction K-nearest Neighbours Classification algorithm (KNN). The existing method has less accuracy and more processing time.

RESEARCH ARTICLE OPEN ACCESS

DIAGNOSIS OF NEOPLASM USING FUZZY LOGIC AND GMRF

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Abstract:
Breast cancer is one of the dangerous cancers in the world related to deaths in women. In some developed countries among eight out of one woman was developed the breast cancer at certain stage of their life. In early stage diagnosis of breast cancer play an important role in treatment of disease. The goal of identifying the genes that are more correlated with the prediction of breast cancer. Computer tomography scan is used to identify breast cancer tissues in the form of image. Depends on an algorithm of fuzzy logic and GMRF property used for the diagnosis of cancer tumor. A Fuzzy logic and Markov random fields work's in real time only they try to display the execution of tumor by comparing proposed algorithm with existing real time algorithm that uses only Markov random field. This is not only applicable for the diagnosis of tumor, but also applicable for the many general applications like detection of object in an image etc.

Keywords:- Tumor, GMRF, Fuzzy logic, segmentation

I. INTRODUCTION:

Breast cancer is one of major cause of cancer related to deaths in women. Different methods are available for the detection of tumor causing cancer. Those methods are used for the detection of cancer in women at early stage. Detection of cancer is very difficult due to non-uniform size and shape of the tumor. Image captured from computed tomography scan. One of the methods used for tumor detection depends on computed tomography image. Within this method, we use probabilistic pixel selection approach. Here the segmentation process is performed in two dimensional slices – to – slice manner. Segmented slices are stored in the form of data sets. In this method, for manytests sets various seed points are used. Some data set had proved to be efficient whereas some data sets have disadvantages. Based on the data sets we are going to test the accuracy of the tumor detection.

One of the methods used for the diagnosis of tumor is depends on the Computer Tomography image. Here we go for lymphocytic infiltration. The main function of lymphocytic infiltration acts as a potential anti-tumor mechanism. In this method pathologist and oncologist go for manual tumors detection. By using the methods like Voronoi diagram, Delaunay triangulation and minimum spacing tree in order to determine the significant featuresfrom the graphs. The estimated methods that are used here are Hausdorff distance, Cross Validation using SVM classifier, VZ Textron based classifier as in [1].

Using CADx system this method is automated. Here we use region growing algorithm and consequent MRF based refinement to isolate LI from the surrounding BC nuclei, baseline level of Lymphocytes as in [1]. Segmentation of the tumor can also have performed by using Gaussian Markov Random Fields. Here the entire image is assumed such that it is having two classes and it is modeled using GMRF. The encoding for spatial interactions between the pixels, its parameters can be easily estimated using least squares. These methods are suitable for real time applications. The segmentation

RESEARCH ARTICLE OPEN ACCESS

Design and Implementation of Indoor Environment Monitoring and Control System

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Abstract:

IOT is a growing technology at present in whole world. It is estimated to be 20 million of devices are going to adapt IOT technology in 2020. So that we are adapting IOT technology in indoor environment system. At present in this busy life schedule it became tuff job to control and monitor environment system. In the previous projects EMAC system had monitored and controlled in only local area. Here we are using 4 types of sensors as GAS, Temperature, IR and LDR sensors to provide different outputs. We are going to control and monitor the indoor environment through manual mode of operation as well as auto mode of operation. It is a great impact in the design of control and monitors the indoor environment system. It reduces the manpower. If any accidents going to be occur it will be rectify by using this system. It is good solution for the large rooms equipped with several servers and computers like as colleges, software companies and universities.

Keywords—IOT, Raspberry Pi, sensors.

I. INTRODUCTION

Temperature, pressure, humidity and the quantity of gasses measured with environmental monitoring system (EMS).Those are all called parameters of environment. These parameters used by many applications as in Industries, smart homes and weather forecasting [2].Now a day's IOT (Internet of Things) playing a major role in all applications. In all over the world the emerging new technology is IOT. It became an important part of new generation of IT (Information Technology) and rapidly strengthens its growth and used in many applications such as home automation systems, monitoring and controlling systems [1].Experts saying that 30 billion objects will emerged with IOT technology in 2020 and will earn up to 7. Trillion by 2020.

In previous years the constant development of colleges, Industries and universities and the increasing number of graduate's practical abilities, the education management had gone through several changes to recruit teaching staff and the construction of labs where number o servers and computers will be used. The main challenge is about to manage the environmental space occupied by those computers and servers. The issue is about to look over the complexity and mobility of each user. At present the education management will manage this issue by providing extra staff as backward process to monitor and controller environmental issues like air condition, temperature and the consuming time of users. It is a waste of time to hire backward staff and a failure to use manpower to monitor the environment [1].In addition to the interface design this work presents a solution to establish a rare room to monitor and control indoor environment.

In adapted technologies they were focused on the elder comfortness as they were control home automation through television set by using remote control and few icons without taking the help of navigation keys.

After examines all the recent technologies here we are adapting few more sensors, controller and motors to measure the correct analysis of environment. The Raspberry Pi is going to collect the data from the various sensors and process it in cloud. Here cloud is used as a storage purpose to store the data through that the person will manage the indoor environment far away from his or her living place. Through GPIO pins of Raspberry Pi we process the data to the motors and by using

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BIOMETRIC SYSTEM FOR RAILWAY TICKETING

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Annamacharya Institute of Technology and Sciences, Rajampet)

Abstract:

This project explains about a possible automated modern Biometric System for Railway Ticketing. The passengers who travel on Metro Railway need not depend on ticket counters, tokens or smart cards to take a ticket. We proposed a Biometric System for ticketing with a centralized well-manageable database which reduces the ticket counters. The system consists of biometric scanners at the entrance and exit gates. It will be opened based on biometric match.

Keywords: ---Finger print scanner, Arduino, GPS, LCD.

I.INTRODUCTION:

The person who has to travel should keep his finger on finger print scanner. It immediately asks source and destination location alternatively on LCD. Based on options display, passenger selects the source and destination through switches. Then GPS calculates the longitudinal distance and displays fare on LCD.

II.PROPOSED SYSTEM:

Finger print of a person is registered when he enters into the railway station.He can enter into any to reach destination and again his finger print is registered at another railway station.Here finger print is linked with aadhar number and to bank details so the money is automatically reduceded from bank account and also we can cate person by gps.

III. BLOCK DIAGRAM:

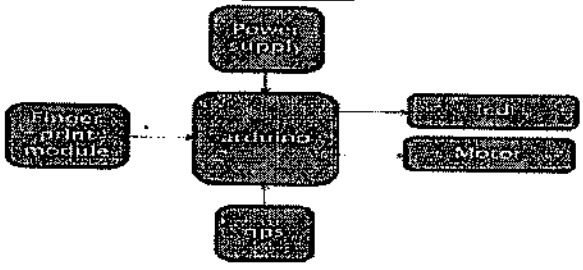

Fig.1 Block Diagram

VI. FLOWCHART:

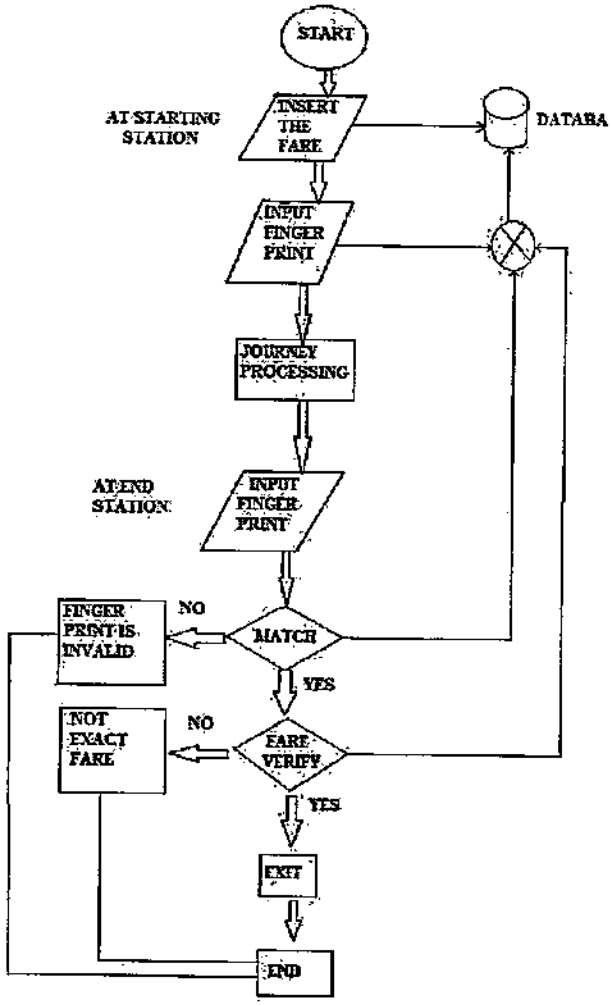

Fig.2 flowchart

RESEARCH ARTICLE OPEN ACCESS

AN IOT BASED REAL TIME WEATHER MONITORING SYSTEM BY USING RASPBERRY PI

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Abstract:

This paper presents the real time monitoring of different environmental parameters using IOT. With the low cost, ARM based raspberry pi board is used for this purpose. Raspbian operating system is selected along with Linux kernel for Raspberry pi. For programming we use python language. As IDLE understand python. The text editor used in raspbian is IDLE. Some digital sensors are used in this system. Analog sensors like DHT11, BMP180 are used in this system for measuring of environmental parameters. Raspberry pi read the data from the input sensors and data is stored in CSV as well as text files. By using things speak.com client can access this real-time data from anywhere in the world. HTTP protocol is used for networking of server.

1. INTRODUCTION:

Weather is affected by many things. And weather is also affected by living and non-living things. Environmental parameters can be studied by using some instruments and equipments. To meet the goal of weather monitoring we have designed IOT based real-time weather monitoring system using raspberry pi. Which is low-cost, portable and high speed weather station using raspberry pi. Some environmental parameters like temperature, humidity, pressure, level of water and gas (or) smoke detection can be measured at our weather station. In this weather monitoring system for environmental parameters we use GSM

RESEARCH ARTICLE OPEN ACCESS

AN IOT BASED SMART INDUSTRY MONITORING SYSTEM BY USING RASPBERRY PI 3

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ABSTRACT:

In Industry Weather Conditions Places a Major Role, If there is any Changes in Weather of the Machines or Equipment Causes Major Damages to the Industry and effects Economy of the Industry, to protect from this type of Damages are introduce IOT Based Smart Industry Weather Monitoring System Using Raspberry pi 3.

It is the Advanced Technology where we can Monitor Weather in the Industry from any where in the World by Using IOT Technology this System Collects the Weather Parameters from Sensors and Updated in thingspeak.com using http Protocol.

1.INTRODUCTION:

Smart Industry Monitoring is used to Monitor the weather Conditions of the Equipment in the Industry it plays a Major role Because if there is any Sudden changes in the Equipment if we consider an chemical heating machine if the temperature of the chemical is exceeds the required temperature if we unable to identify that changes if the temperature is keep on industry then the chemical may over flow or causes any chemical reactions may damages the equipment and the gases

RESEARCH ARTICLE OPEN ACCESS

IOT Applications on Secure Smart Shopping System

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Abstract:

A shopping center or complex is where individuals purchase item(s) for their general utilizes. The clients need to hold up in long lines to get their items filtered utilizing standardized tag scanner and get it charged. To overcome this, we have developed a Smart Shopping Cart using RFID (Radio Frequency Identification). This usage is utilized to help human while shopping and furthermore to abstain from remaining in long lines and accordingly sparing time. The items in the strip malls will have RFID labels to recover/get to data about it. At the point when a client puts an item in the keen trolley, the RFID Reader will read the Product ID and the data identified with it will be put away in Controller. GPRS is used to upload the data to the server.

Key words — RFID Reader, GPRS, LCD display, Bluetooth

I.INTRODUCTION

Presently days acquiring and shopping at huge shopping centers is turning into a day by day action in metro urban communities. We can see colossal surge at shopping centers on vacations and ends of the week. The surge is much more when there are unique offers and rebate. Individuals buy distinctive things and place them in trolley.

The framework will be put in all the trolleys. It will comprise of a RFID peruser. Every one of the items in the shopping center will be outfitted with RFID labels. At the point when a man puts any items in the trolley, its code will be identified and the cost of those items will be put away in memory. As we put the items, the expenses will get added to add up to charge. In this manner

The basic purpose of this technology is to minimizing tasks and making every day jobs easier and faster, irrespective of the various domains available. A major duty on which human beings are found spending significant amount of time in shopping. According to a Survey, approximately many of the human beings spend 1.5 hours daily on shopping.

More number of customers will walk out of a queue if the queue is very long. Product name and its cost will be shown on LCD module. At the charging Counter the aggregate bill information will be exchanged to PC by remote modules.

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RESEARCH ARTICLE OPEN ACCESS

Smart Waste Management Based On IOT

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Abstract:

Being growing the population of world the quantity of waste also scattered every corner of the cities, villages, colleges, hospitals, industries etc. There is no place where human life not exist. Wherever human life they will produce tons of waste and that is going to spread smell throughout the environment. It will give the harmful diseases to humans. For this issue here we are using IOT based smart dustbins to collect the data immediately when it is filled. And this project we are constructing the whole system with two sectors. One is dustbin section and the other one is concern municipal authority section. Here we are using the Raspberry Pi 3 board and Ultrasonic sensors as main components. Ultrasonic sensors will sense the distance filled in dustbin and through GSM Module give the "ALERT" message to the concern municipality authority. In this project we are using USB camera to live streaming and the directions will measure with GPS Module.

Keywords— IOT, Raspberry Pi, Ultrasonic sensors, GSM Module, USB Camera.

I. INTRODUCTION

IOT is nothing but internet o things that is going to connect all physical devices with embedded devices through wireless connectivity.IOT is a growing technology in the world. By research it is going to be 20 million devices connected with IOT in 2020.It is going to play a major role in the project.Technology is being growing and massive changes occurred but still the waste management problem hit the world continuously. Every day by every human tons of waste producing .A city will be a smart city where the neat and clean environment present to survive human without any health issues.

In previous papers the results not been calculated accurately. Zigbee technology used in dustbins system but it given inaccurate results. RFID technology had used in previous system but it is only permitted with certain distance. Radio distance identification system is given the accurate results but its range is limited.

Another technology Cloud Based waste management system is used but it works with high speed connection of internet if the connection is loss system won't work. By seeing all these technologies here we adapted the IOT wireless technology. Recently Dry and Wet dustbins are distributed everywhere in INDIA as a process of Swatcha Bharat Mission by our PM Narendra Modi Sir. But due to lack of information that is not going in a proper way as expected. The dustbins are overflowing everyday and it gives unhygienic problems, health issues and bad smell surrounded everywhere.

In this project we are taking a smart Waste management topic as a main assert of the smart cities. Here we are adapting IOT technology with smart waste management system. As the project procedure every corner of the city dustbins are provided with embedded Kit. That kit is connected with Raspberry Pi 3 and Ultrasonic sensors. In this project we are using distance finder ultrasonic sensors to measure the distance of waste present in the dustbins.

For each dry and Wet dustbins are provided with embedded kit with interfaced camera to live streaming. Whenever the dustbins fill the Ultrasonic sensors will sense the distance and provide the information as "ALERT" to the municipal authority through GSM module. An internet link also send by the message through which the municipal authority able to check the GPS tracking as well as the live streaming. By using PC or Smart phone we can check the status of the waste management system.

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RESEARCH ARTICLE OPEN ACCESS

Automatic White Board Cleaner Using Arduino Uno

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Abstract:
In recent years whiteboard has become a acute aspect at about every educational institute. They are ample in size for that acumen it is actual time arresting and annoying action to abolish the writings from the lath with besom manually. it break absorption of both advisers and listeners. Automated Whiteboard cleaner can break these problems. Automated whiteboard cleaner will abate the time and as well the effort. This cardboard represents the architecture and architecture of automated whiteboard cleaner.The adjustment consists of Arduino UNO microcontroller, disciplinarian module, dc accessory motor, arbor and adhere mechanism, supports and a cleaner bar to accord that an automation figure. If the about-face is on, it moves beyond the abounding amplitude of the lath, and its administration is antipodal automatically in adjustment to apple-pie the board. So, this "Automatic Whiteboard cleaner" is a abundant backup of "duster" and it can be appropriate to use this to abate the accomplishment of the lath user asable-bodied as to acquaint the classroom with an automation system.

Keywords: ARDUINO UNO, DC MOTOR, L293D, GEAR

1.INTRODUCTION

The acceptance of whiteboards added rapidly in the mid–1980s and they accept been acclimated in abounding offices, affair rooms, academy classrooms and added plan environments. The aboriginal whiteboard (also alleged brand boards) began to arise on the bazaar in the mid–1960s. The aboriginal whiteboards which were actual big-ticket were fabricated of a melamine surface. It was absolutely the "perfect" Band-Aid to the chalkboard, except that it ghosted in a abbreviate time and was not simple to accumulate clean. In our chic or address rooms, the acute charge for a besom that would be readily accessible at all times for charwoman the whiteboards has been a aloft concern, the acme of some boards cleaners aswell affect the area of the lath to be cleaned. Even if the lath cleaners are available, it takes address time abroad from the academician to abolish the lath afresh and again. For this reason, its charge for a faster, time extenuative and readily accessible cleaner has accustomed bearing to the architecture of an automated white lath cleaner that can apple-pie the lath in a baby bulk of time as possible.Now, white lath is the best autograph average during teaching beyond the world. At present, it is apparent that about aggregate is automated. The automation adjustment has the accommodation to abate the animal accomplishment and to accomplish any adjustment easier. So, those became accessible for micro-controlling system. ARDUINO UNO is the ambassador used. It is based

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RESEARCH ARTICLE OPEN ACCESS

SMART E-BILL GENERATION USING PLC

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ABSTRACT:

In the contemporary world, intelligent control is adopted in all fields like communication, home gadgetry, medicine etc. Unfortunately, the service providers of electricity are still using the usual methods for getting the information of energy consumed by the customer. The traditional method of energy meter billing is a long outdated, ineffective and time consuming one. Technology of e-metering (Electronic Metering) has gone through rapid technological advancements and there is increased demand for a reliable and efficient system i.e. Automatic Meter Reading (AMR). This paper presents the smart E-bill generation using PLC and its related features for making the job of metering easier.

The proposed system replaces traditional meter reading methods and enables remote access of existing energy meter to the energy provider. Also it enables the energy provider to monitor the monthly meter readings without the person visiting each house. In this the GSM is incorporated with the energy meter through which the message is directly received by the consumer and the monitoring system and this system also enable the consumer to know his meter readings at the end of every month all the way through a simple SMS to his subscribed phone number. This mode of the system provides flexibility to the customer to pay his due amount on the very day on bill generation.

Keywords : ***GSM PLC, Electronic meter***

1.INTRODUCTION

1.1 PROGRAMMABLE LOGIC CONTROLLER

In general the process control system is made of a group of electronic devices and equipment that provide stability, precision and remove the harmful conversion statuses in production processes. As a result of fast progress in the technology, many difficult operational tasks have been solved by linking PLC's and possibly a computer.

Beside connections with the instruments like operating panels, motors, sensors, switches, valves and such possibilities for communication among instruments are so great that they allow high level of utilization and process coordination as well as greater flexibility in realize the process control system. In automated system, programmable logic controller is usually the central part of process control system. With the execution of a program stored in program memory the PLC continuously monitors status of system through signals from the input devices. Based on logic implemented in program, PLC tells which actions need to be executed with output instruments. To run more complex processes it is possible to connect more PLC controllers to a computer.

1.2. ARCHITECTURE OF PLC

The architecture of plc is same to that of the usual industrial used pc. The main difference that appear is PLC's contain input and output

DESIGN AND SIMULATION OF STATUS REGISTER USING MULTIBIT FLIPFLOP FOR UART APPLICATION- (TIME-EC056)

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Abstract:

Universal Asynchronous Receiver and Transmitter (UART) is the microchip for asynchronous serial communication. This paper is mainly focus on the design of status register of UART using multibit flipflop (MBFF) and compares with single bit flip flop (SBFF). MBFF with delay assertion technique is used to reduce the Power and area by merging the flip-flops using combination tables. While the data is being transmitted as well as received, it will detect some types of errors like parity error, framing error, overrun error and break error. Using the MBFF method the total inverter number is to be reduced by sharing the inverters within it in turns gives reduction of wire length, hence these results in reduction of area and power consumption. The comparison results for the flipflops with merging and without merging by using delay assertion technique are observed.

Keywords—UART, status register, Multibit flipflop, Delay assertion technique, Quartus II, power play analyser.

INTRODUCTION:

One of the transmission data types is serial communication protocol i.e. UART (Universal Asynchronous Transmitter and Receiver). It is mainly used for serial data communication in an asynchronous way and by it converting the data from parallel to serial at the transmitter by adding some extra bits using a shift register.

Synchronizing the flow of data signals among synchronous data paths using clock distribution networks. The network of this design can dramatically affect the reliability and system . wide-performance. The skew background is providing a better understanding between the clock distribution networks and interacts with data paths. The timing constraints of high and low clocks are developed from the relative timing between the data paths and localized clock skew network. Reducing the number of switching elements in the circuits internally logical elements and number of flipflops must be reduced.

The process of analysing the timing performance of multi bit flipflop can be done by using simulation in Quartus II and power play analyser as well as tanner tool. Therefore, the results such as clock buffer and gate delays are will be reduced in the clock distribution network. As a result, the total area for the design and power consumption is reduced.

II. UART ARCHITECTURE:

UART architecture or protocol used between the devices in order to communicate. Number of computers and microcontrollers including most of the serial data parts over to connect with other Input as well as output serial devices such as printers, mouse, keyboards. Using a UART can establish a connection between two computers and in each device Serial parts are being used between them. A cross server cable requires establishing a connection between the transmitters of one UART to the receiver other computer UART and vicing versa. In UART communication Transmission of data bit by bit at a time over single data communication cable to the other receiver. To transfer the data over the long distances, this method is useful as it requires low data transfer rates. In serial communication most of the computers consist of one or more serial ports, so it becomes easier than other transmission, hence there is no requirement of hardware. A cable is required in order to establish the connection between the two devices. A UART provides the minimum number of wires to send information. Without giving a clock signal we can send the data bit. The conversion of parallel-to-serial while transmitting and serial-to-parallel when receiving is the Main function of the UART Clock signals. The proposed system of UART comparing it with existing method is explained in this paper.

2.1 LINE CONTROL REGISTER (LCR):

LCR is a Line control register and acts as byte register. The usage of LCR format is to specify the format frame and baud rate decider. It is used for precise specification of frame format and decided baud rate. By writing the exact bits in LCR we can change the parity bit, baud rate selection, stop bits, wire length.

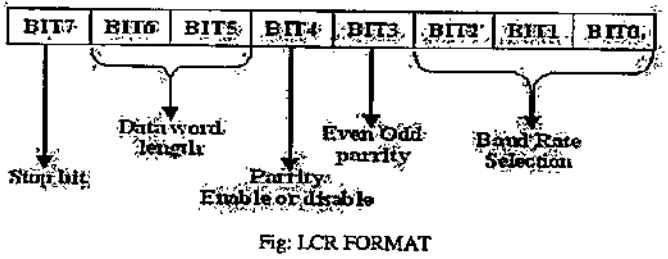

Fig: LCR FORMAT

RESEARCH ARTICLE OPEN ACCESS

THINGS DETECTOR USING EMBEDDED SYSTEMS

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Abstract:

This paper presents a hardware design and implementation of a robot vehicle namely **Things detector using Embedded systems** which is used to identify the objects automatically which are at random places in a room. The robot vehicle consists of Arduino uno board, Ultrasonic sensor, RFID tags, Wheels for robot movement, DC motors, Motordriver, Bluetooth module and Power supply for the circuit. An android app is developed on the smart phone to operate the robot vehicle. The commands to the robot vehicle will be transmitted through Bluetooth module. After receiving the information the robot will start identifying the required things. If e obstacle on the robot path will be detected by the ultrasonic sensor. A buzzer sound will be given to the user after identifying the things. By using this robot vehicle we can save our valuable time.

INTRODUCTION:

Now a days in homes and offices there are so many things at random places. To identify that thing or object manually it requires a lot of time. So to reduce it, **Things detector** is implementing in this paper. Each object in the room will consists of an RFID tag. The object to identify will be select through the app. The information from app to robot vehicle will be transmitted through Bluetooth module. After receiving the information the robot will start moving. During the path if there is any obstacle, ultrasonic sensor will detect the obstacle and that information will be given to the microcontroller. Based on this the robot vehicle will move either left or right as per the commands written to it. Whenever the code matches with the object the robot movement will stop and a buzzer sound will give to the user such that an indication is being made to the user i.e., required object is being detected.

1. BLOCK DIAGRAM:

The block diagram consists of components like microcontroller arduino board, ultrasonic sensor and RFID tags etc. as shown in below figure 2.1.

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RESEARCH ARTICLE OPEN ACCESS

War Field Spy Robot Using Night Vision Technology

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Abstract:

The main aim of our project is to develop a robot which will be used for the surveillance of human activities in the border regions or restricted areas where it is not possible for the humans to keep an eye in person all the time. It consists of a wireless night vision camera which can give live monitoring and is able to capture the images of objects and gives the information through the WI-FI module. Our soldiers have a huge risk over the unknown territory during the war it helps them to minimize the human casualties on our side in case of any attack.

Keywords: Surveillance, Night vision camera, Territory, WI-FI module.

1.INTRODUCTION:

With increasing technology day by day, there came many revolutionary changes in all the sectors especially in the field of robotics. Robotic technology is playing a major role in the defense sector.

Smart phones which are the one of the biggest technical advances in the world occupy a major part in people's lives. smart phones also have brought a revolution in changing people's lifestyle and providing numerous applications on different operating systems. Android Operating system is one such OS which providing many applications for robotics.

The main technology used here for the communication is WI-FI module ESP8266. This module will be connected with robot and the commands to the robot will be given through the android application(MIT). The war field robot consists of Raspberry PI board as a controller board. It has two L293D motor driver IC's along with a Wi-Fi module.

Two DC motors are also used for the motion of the robot. Another DC motor is used to rotate the camera. The night vision wireless camera is attached with the robot in order to monitor the current situation in live and the camera can be rotated 360 degrees via the android application through motor. PIR(PASSIVEINFRARED) sensors are used for motion detection. Metal sensors are used to detect the weapons.

2. EXISTING SYSTEM:

There are different types of existing systems depending upon the type of technology used for transmitting of data. The most commonly used method uses Bluetooth technology. The Bluetooth

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RESEARCH ARTICLE OPEN ACCESS

DESIGN AND ANALYSIS OF 16-BIT RISC PROCESSOR USING LOW POWER PIPELINE

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Abstract:

RISC is a design philosophy to reduce the complexity of instruction set that in turn reduces the amount of space, cycle time, and cost, power consumption taken into account during the implementation of the design. The existing system is an Arithmetic and Logical Unit which performs only Arithmetic operations such as ADD,SUB, MUL, DIV, and logical operations such as AND, OR, NAND, NOR, NOT, XOR, XNOR operations and consumes more power. The execution delay is also high. To overcome the above mentioned problems, 16-bit RISC processor is proposed. 16-bit low power RISC processor consists of the blocks mainly ALU, Universal shift register, and Barrel Shifter. This system consumes less power and the execution delay is also less. The processor is designed using XILINX ISE Design suit 14.3 & the total power estimation is done by the X Power analyzer.

Key words: - ALU, RISC Processor, Low Power

INTRODUCTION

Basically an ALU is a combinational digital electronic circuit that performs arithmetic and bitwise logical operations and produces output of the performed operation. ALU also exchanges additional information with a status register. ALU can be designed to perform complex operations resulting higher complex circuit, large size, cost and power consumption .consequently ALU's are limited to simple operations that can be executed at high speed and the external processor is responsible for performing complex functions by arranging as a sequence of simpler ALU operation. When the design of a controller become more complex in CISC processor and the performance was also not up to the operations, an alternative that was found in RISC processor

FEATURES

- Uniform instruction encoding.
- A homogeneous register set, allowing any register to be used in any context and simplifying compiler design.
- Few data types supported in hard ware.

HISTORY

The concept of ALU is proposed in 1945 by a mathematician john von Neumann in a report on the foundations for a new computer called EDVAC.All serial computers and many early computers had a simple ALU that operated on one data bit at a time one of the earliest computer to have multiple discrete single bit ALU's was the 1948 Whirlwind I, which used 16 such math units to perform operation on 16-bit words first ALU-IC was implementedin1967, {Fairchild introduced}, With 8-bit ALU. In 1970's. ALU's for 4-bit &8-bit operations were appeared. Today modern alu's have wide word widths and hierarchical enhancements

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RESEARCH ARTICLE OPEN ACCESS

Energy Optimization based on PLC Automation

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Abstract:

In most of the public places electricity is being wasted as most of the common people do not think of switching off the electricity when they leave the places. Example: Offices, School, Colleges, Railway Station and so on. Proposed system monitor the presence of people by means of sensing the heat released from human body. As long as the people exist in the area power to the area will be made available. Once the system detects no people exists after a delay time it switches off the electricity to save the energy. Implementation of proposed system does not required cabling, routing and damaging the existing wall to implement the system. This circuit is designed Radio Frequency based wireless system. Thus Sensor detects the human movements and passes the information wirelessly to the RF wireless controller to take the necessary action. RF control has in-built off delay timer to achieve the required control.

INTRODUCTION:

We are seeing that, by 2050 70% of our Indian population lives in cities. Do we have enough infrastructures for meeting that load demand? Do we have any means for not wasting the power that is generated?

We must get smarter, we have technology, and we just have to integrate it and make it work. In such an aspect conversation of power is the key to achieving desired results in today's competitive business environment.

COMPARISION OF MICROPROCESSOR AND PLC:

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RESEARCH ARTICLE OPEN ACCESS

Comparison of neural signals for ADC in Neural Implants

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Abstract: Low noise amplifiers used to benefit the patients suffering from paralysis by analysing the neural implants. The power consumption of the ADC directly depends on the architecture and construction of latched comparators. So it is advantageous to design the low noise latched comparators. In this work, the enhanced architecture for a latched comparator is implemented which is much useful in analysing neural implants. The proposed circuit will have less power dissipation than that of the existing architecture of latched comparators. In this paper, the proposed circuit is simulated using tanner EDA tools.

Keywords: ADC, latched comparator.

1. INTRODUCTION:

In electronics, operational amplifier is designed to be used with negative feedback. It can be also used as comparator in loop configuration. Comparator is especially designed for open-loop configuration without any feedback. Hence it is the second most widely used device in electronic circuits after operational amplifier.

Comparators are mostly used in analog-to-digital converter(ADCs). In the conversion process, first the input signal is sampled. Then the sampled signal is applied to a number of comparators to determine the digital equivalent of the analog value. These are also used in peak detectors, Zero crossing detectors and switching power regulators.

Comparator is the device that compares two analog voltages or currents and switches it output to indicate which one is larger.

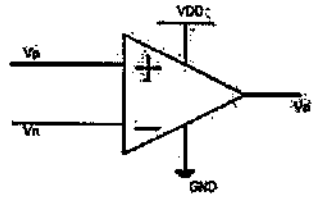

Fig 1: Schematic of Comparator

The above figure shows the Schematic diagram of comparator.

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REDUCTION OF PAPR IN MIMO-OFDM USING ADAPTIVE SLM AND PTS TECHNIQUE

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Abstract

This work will focus on performance comparison between two methods for combating the effects of PAPR: i.e. Selective Mapping (SLM) and Partial Transmit Sequence (PTS) method. These two methods are compared in terms of bandwidth efficiency and computation complexity with BER and PAPR reduction performance. This paper also describes the analysis and simulation of a modified SLM

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Design of Dynamic Latched Comparator with Reduced Kickback Noise

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Abstract

Dynamic latched comparators are used because they use two back-to-back cross coupled inverters to convert a small input voltage difference to a supply voltage level in a short time, which is known as positive feedback technique. Here we adopted a technique to reduce kickback noise produced by regenerative nodes of dynamic comparator. Our reduction technique uses Exclusive OR gate in between regenerative nodes and inputs which will avoid to interfere inputs with noise. To present our results with existing systems we used Mentor Graphic Tool for simulation purpose. The proposed design can be used for the application of SAR ADC in Implantable Biomedical Devices.

Key Words : Kickback noise, Positive feedback technique, Successive Approximation Register (SAR) Analog to Digital Converter (ADC).

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Research Paper

A 14-bit 10kS/s power efficient 65nm SAR ADC for cardiac implantable medical devices

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Abstract

This brief presents a 10kS/s 14 bit 12.5 ENOB Successive Approximation Register Analog-to- Digital Converter for Cardiac Implantable Medical. For achieving power efficient operation, SAR ADC employ SAR control, a new power and noise efficient comparator topology, non- binary weighted capacitive DAC. The linearity of implemented SAR ADC is enhanced with the uniform geometry of non-binary weighted capacitive DAC.The proposed SAR ADC is implemented using 65nm CMOS technology. The latched comparator consumes a power of 2.4uW and it provides an ENOB of 12.6 at a supply voltage of 1V.The INL is between -2.7/+1.6 LSB and DNL is between -0.6/+1.4LSB. The FOM of ADC is 40fJ/conv. Step which is comparable with existing ADC topologies.

Keywords: Successive Approximation Register Analog-to-Digital Converter; ENOB; INL; DNL; Cardiac Implantable Medical Device; Comparator.

1. Introduction

The advancement in CMOS Technology has spurred increasing demand for integrated cardiac implantable medical devices like defibrillators and pacemakers. These implantable devices have to operate with a non-rechargeable battery over their life time almost for 10 years. Among various components available in the implantable devices, Analog-to-Digital Converters are power hungry and also the most critical component in measuring cardiac signals. Cardiac Signals are low frequency analog signals and doesn't require high speed for their conversion. Thus designing an ADC for cardiac applications with low power consumption and required conversion accuracy makes it a great challenge. Successive Approximation ADCs are being widely used in biomedical applications as they operate with low speed and medium resolution and also with low power budget. Also the main reason for utilizing SAR ADCs in cardiac Implantable devices is due to their simplicity in their structure. Normally SAR ADCs show very high energy efficiency, but due to comparator noise and capacitor mismatch, SAR ADCs are limited to medium resolution. To overcome the effect of capacitor mismatch, binary weighted capacitance array in DACs has been implemented in [1], [2]. An alternative technique called dithering has been proposed to cancel the errors in the DAC and also to improve the linearity [3], [4]. Many attempts have been made to cut down the power consumed by SAR ADC with the prominence on designing latched comparator and capacitive DAC. In this work, Low power SAR ADC is designed by modifying the existing architectures of latched comparator and effective capacitive DAC. The architecture of DAC is modified such that the size of capacitance in the DAC is reduced and in turn power consumption and area of DAC are also reduced. In this work, the implementation of non-binary weighted DAC is done. This type of converter exhibits redundancy during the conversion but however array capacitance value in the DAC is rounded off to the nearest integer value, such that it leads to uniform geometry. Moreover, the power consumption of latched comparator is also reduced by modifying its architecture, which indeed reduces the charge injection, kickback noise and clock feedthrough.

The organization of the brief is as follows. The architectural implementation of an ADC is discussed in section II. The simulation results of SAR ADC and its comparison is presented in section III followed by conclusion remarks in section IV.

2. Proposed architectural implementation of SAR-ADC

The architecture of SAR ADC implementing in cardiac IMDs is depicted in figure 1. It mainly consists of a synchronous SAR, latched dynamic comparator and a non-binary differential weighted capacitive DAC and. The differential inputs to the DAC are sampled on the capacitive array by using bootstrapped switches.

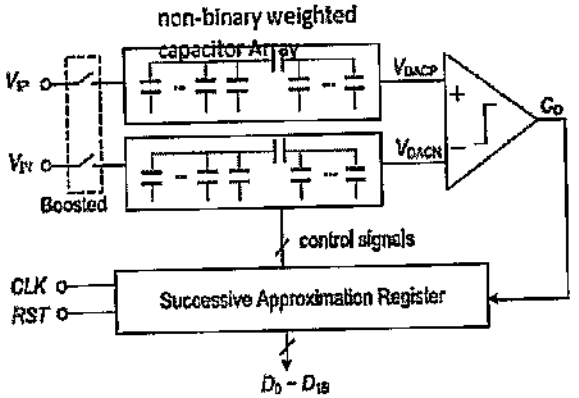

Fig. 1: Architecture of Proposed SAR ADC.

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Research paper

A Modern Approach for Software Cost Estimation using Neural Networks

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Abstract

Programming planning estimation and examination especially, cost estimation exercises have been in the point of convergence of thought for a few associations. Maker explores the usage of the ace result declaration and machine learning methods using intelligent framework and moreover focusing COCOMO II method to manage estimate the cost of programming. Few basic techniques in the usage of neural framework in surveying programming cost. Made to great degree exact results, however the genuine incident in their work was a direct result of the way that the precision of the report depended enthusiastically on the degree of the planning set [4]. Getting the hardship in implementing neural frameworks, the maker makes a dynamic neural framework that would at first use COCOMO II. Sorting out upgrades and its results the amount of instructive gathering augmentations with commitment from ace finalizing that effects the studying strategy.

1. Introduction

The idea of programming cost declaration has been becoming quickly because of reasonableness and interest for it. There are numerous models and instruments utilized as a part of programming cost estimation that gives precious data with respect to endeavors and consumption to the administration to offer for a venture [1]. In any case, most of the devices utilized depend on Algorithmic models that gauge the exertion utilizing a factual approach. For all intents and purposes. With everything taken into account, ace judgment does not require any chronicled data and is frequently in light of organization or estimator memory of past errands that could have been documented.

Studies did by Hemstra and Vigder revealed that 62% of estimators in affiliations use this impulse technique. Hughes in his paper discussed and perceived the characteristics and deficiencies of ace judgment and perceived the support of the strategy in industry [12].

Among central purposes of using expert judgment is that the estimation is changed to the specific various leveled culture, which adds to the precision of estimation stand out from a general algorithmic approach. Ace judgment is a non-sorted out process in spite of the way that a significant part of the time it has been exhibited to give an unrivaled precision than using diverse frameworks. The last estimation of the specialists is subjective and in light of emotions and rationale. The coherent part of human basic leadership process is extremely unpredictable yet it depends on the way toward duplicating and mirroring [8].

The creator expects to utilize the idea of the master defining result process and build up a versatile learning machine in light of neural system to assess the product cost. The creator expects some comprehension of neural system [13, 14, 15] and in addition nature with the adjusted COCOMO II.

2. Intelligent Internetworks

The principle motivation for Neural Systems (NN) started from the need to make recreated structures fit for complex, perhaps "brilliant", computations like the natural neurons in cerebrum structures. Neural frameworks involve layers of interconnected center points, where each center point conveys a non-coordinate limit of its data [11]. The centers in framework are isolated into the ones from the data layer encountering the framework to the ones at the yield a couple of center points in a covered layer.

The NN methodology working up the structure of the framework and setting up the approach used to set up the framework with using a current educational accumulation. Thusly, there are three essential substances: the neurons (center points), the inter network structure, and getting estimation. The most broadly perceived method in the usage of the neural framework for figure, arranged support forward frameworks. Neural frameworks have been used as a piece of the item trustworthiness showing space and also programming risk examination [16]. In programming cost finalization and utilized line of code (LOC) as the cross of an endeavor. Boehm made and balanced the standard pseudo code frameworks utilized for programming cost estimation called COCOMO II which has 3 unmistakable models however the most down to business one is the post arrangement show up, which is utilized after the undertaking's general building has been conveyed. It chooses the undertakings (Face to confront Months) required for a wander in perspective of writing computer programs assignment's size in KSLOC factors known as scale components and effort multipliers by

A Multi-Class Load Balancing Algorithm (MCLB) for Heterogeneous Web Cluster

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Abstract: Faced with increasing demand for network services by a huge number of users, requests to the web servers have significantly skyrocketed. Consequently, most of these servers need to run twenty-four hours a day, seven days a week with a high reliability and availability. Thus, the tremendous growth of the Internet has led the requirement of web server cluster management in order to deal with these issues effectively. 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 be deprived from substantial performance under database-driven and dynamic contents. The most serviceable load balancing approaches to provide better results under specific conditions are Weighted Round Robin (WRR) and Client Aware Policy (CAP). By considering this, a Multi-Class Load Balancing algorithm (MCLB) was proposed for web server clusters and also an analytical model was proposed 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 service time of each request class type is used for load balancing. The experimental results demonstrate the effectiveness of the proposed approach by improving the average response time, error rate and throughput of the web server cluster.

Keywords: Load Balancing; Web Cluster; Content Aware; Throughput; Response Time.

1. Introduction

A web server system is the group of clusters in the networking environment to fulfill the web requests-based services. Through a web server system, any number of websites can be hosted for the purpose of education, business or technology. Due to intensive growth of website domain, the number of users is growing drastically day-by-day. As a result, the number of web requests has been arrived in an excessive manner at the web servers and it becomes overloaded and respond slowly. "In 1995, the number of internet users was lower 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" (Ramana & Ponnavaikko, 2015).

Whenever any web server responses are not up to the user's expectations, they get less interest on that website and then it affects the popularity and commercialization factor of that organizational website. All the web servers are required a suitable architecture to manage these excessive load of web requests. Several existing approaches for balancing the load of web servers are already working in the current environment, but still the web servers are responding slowly. Therefore, an efficient approach is required to balance the load of the web server system so that it can respond quickly and improve its availability to end users.

In web server cluster, load balancing includes a few noteworthy concerns. The essential concern is the estimation of work load. In various applications, workload has diverse meanings. In Internet services, the client's request is a basic building block of load balancing and its response with lively connections is a simple server load index.

Present web server clusters have some difficulties in providing services to the clients. First, in current websites dynamic workloads are becoming crucial, which imposes significant performance drop in web clusters with the shortcomings of present load balancing algorithms. When compared with the static web pages, the dynamic content requires high resource demands which lead to poor performance without suitable load balancing mechanisms in cluster-based web servers. Due to versatile demands, sometimes the request rate is greater than the cluster capacity. This is unpredictable with the flash crowds using the internet.

In this research paper, a dynamic and robust load balancing approach is proposed for content aware dispatchers. Three contributions are provided in the load balancing mechanism for web server clusters. The primary contribution is calculation of approximated load of a web server. Web requests are classified according to service time. The second contribution is a robust load balancing algorithm

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Cryptography Algorithms - Issues On Recent Trends

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Abstract: ***Cryptography in the olden days was used in keeping military information, diplomatic correspondence secure and in protecting the national security. However, the use was limited. Nowadays, the range of cryptography applications have been exploited lot in the modern area after the development of communication. To provide the security, cryptography is essentially required to ensure that data are protected against penetrations and to prevent espionage. There are various cryptography techniques used for protecting the data such as symmetric and asymmetric algorithms. The survey is done on some of the more popular and interesting cryptography algorithms currently in use and their advantages and disadvantages are also discussed. This paper provides a fair performance comparison between the various cryptography algorithms.***

I. INTRODUCTION

Nowadays, cryptography plays a major role in protecting the information of technology applications. Information security is an important issue, for some applications such as ecommerce, e-banking, e-mail, medical databases, and so many more, all of them require the exchange of private information.

Cryptography is the craftsmanship and exploration of accomplishing security by encoding messages to make them clear. The introduction of cryptographic algorithms started at the 70's. The most robust and secure asymmetric algorithm was proposed by Rivest, Shamir and Adelmann (RSA) in 1977 and proved to become a defacto standard, with a large basis of products and applications that are still in operation. At the same time, a symmetric crypto-algorithm was adopted by the National Bureau of Standards, by evolving an IBM's earlier crypto-system known as LUCIFER. The Data Encryption Standard (DES) was released in January 1977, and reviewed every five years. The standardization of the DES algorithm ended in 1998, with the announcement of the Advanced Encryption Standard contest.

II. CRYPTOGRAPHY GOALS

By using cryptography many goals can be achieved, These goals can be either all achieved at the same time in one application, or only one of them, These goals are:

- ✓ *Confidentiality:* it is the most important goal, that ensures that nobody can understand the received message except the one who has the decipher key.
- ✓ *Authentication:* it is the process of proving the identity, that assures the communicating entity is the one that it claimed to be, This means that the user or the system can prove their own identities to other parties who don't have personal knowledge of their identities. (The primary form of host to host authentication on the Internet today is name-based or address-based; and both of them are notoriously weak).
- ✓ *Data Integrity:* its ensures that the received message has not been altered in any way from its original form, This can be achieved by using hashing at both sides the sender and the recipient in order to create a unique message digest and compare it with the one that received.
- ✓ *Non-Repudiation:* it is mechanism used to prove that the sender really sent this message, and the message was received by the specified party, so the recipient cannot claim that the message was not sent [2].

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Research paper

Data Mining Models of High Dimensional Data Streams, and Contemporary Concept Drift Detection Methods: a Comprehensive Review

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Abstract

Concept drift is defined as the distributed data across multiple data streams that change over the time. Concept drift is visible only when the type of collected data changes after some stable period. The emergence of concept drift in data streams leads to increase misclassification and performing degradation of data streams. In order to obtain accurate results, identification of such concept drifts must be visible. This paper focused on a review of the issues related to identifying the changes occurred in the various multivariate high dimensional data streams. The insight of the manuscript is probing the inbuilt difficulties of existing contemporary change-detection methods when they encounter during data dimensions scales.

Keywords: *CUSUM, streaming ensemble algorithm, concept drift detection, dimensional data streams, change-detection tests, Hoteling's t-squared test, Bayesian Online Change Point Detection.*

1. Introduction

The advanced technology and its fast-growing nature have changed the world as the digital world. So, there is a continuous growth in the volume of automatic produced data. In general, the streams of generated digital data have three main complexities. These difficulties are categorized on the base of size, steady rate, and evolution in terms of time.

These issues are addressed by the computing system and computational intelligence systems. The traditional computing systems address the issue about the unbounded size of data and the arrival of high steady rate problems through the implementation of approximate and quick solutions promptly where the with advanced computational intelligence system resolve the complicated issue, data generated in the dynamic environment. This study of evolving data in the dynamic environment considerably has taken prominent attention over the past ten years. This study of resolving dynamism of the non-stationary data is familiar with the concept drift.

The conventional online learning algorithms are not able to control the dynamic evolution of data issue as they can't abandon the old and obsolete data. Hence the evolving learning algorithms which are adaptive can deal the concept-drift issue wisely as they can subsume unlearning mechanisms and discard the outdated concepts.

There are various definitions for different issues of the concept change such as a wish to alter the stock value during bear market but sudden bear market rally is not applicable. To surveillance, the lower limit will only decrease the false alarm of lower limit when monitoring the upper and lower limits of a control chart. To apply a heuristic method to an identified issue then the most significant data available will be trained data for the used method. The robust unsupervised approaches support to discuss the unfamiliar context to detect a change. There may be a swift or progressive change and a single or recurrent change. So, to detect a difference can be critical. The hypothesis on contextual properties will be more in different dimensions. Further, the change can evolve into a single feature, many features or different features. It is observed in the novelty detection literature [1] that unsupervised learning in data subspace usually performs better than unsupervised learning that considers entire data as single data.

The categorization literature states that the concept-drift [2] is considered when changes occurred in the distribution where detecting changes usually happen by supervising the evolving of errors over time in the scalar classification sequence [3], [4], [5].

2. The Taxonomy

Data Stream Challenges

Currently, researchers have paid attention to machine learning. And their prominent focus is on data stream categorization. Such works have dealt with several challenging issues [6] like:

- Arriving at online Data streams at high-speed rate steadily,
- Lacking the control on the order of incoming data
- Having potential limitless in size, caused to extract and store a precise information

Due to the above attributes, the machine learning algorithms can't deal with concept-drift as these algorithms need access to entire data to work offline.

Hence the process of online is appropriate to classify the data stream. So, the proposed model requires some prerequisites such as:

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Energy Optimization in Directional Advanced Intruder Handling AODV Protocol in MANET

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Abstract

Mobile Ad-hoc network is a collection of nodes which tries to communicate each other without any fixed infrastructure. In this network, nodes can move freely and dynamically from self-organized into arbitrary topologies. Due to self-organizing, the network is vulnerable to attack by an intruder who attempts to gain unauthorized access and damage data on communication medium. Transmitting of packet from source to destination is one of the greatest challenges because the packet should reach the destination without disturbances like delay, packet loss and intruder etc. Adhoc On-Demand Distance vector protocol is designed for transmitting of packet by finding a new route when it's needed. Even though this protocol is creating a path on demand, protocol functionalities has limitations on route redirection, security and energy consumption. This research article is worked to develop algorithm to identify the failure and Black hole attacker nodes in the network. The algorithm uses directional antenna transmission to optimize the energy consumption as energy factor is an important challenges in MANET. The developed protocol is named as Directional Advanced Intruder Handling Ad-hoc On-Demand Distance Vector protocol (Directional Advanced Intruder Handling Ad-hoc On-Demand Distance Vector). The algorithm are simulated in NS2 and compared with Ad-hoc On-Demand Distance Vector protocol. The result of analysis shown, proposed research algorithms performed 50% better than AODV protocol.

Keywords: MANET, Black hole attacker, Failure node, Divide and Conquer, Directional Antenna .

1. Introduction

A Collection of nodes formed a network under the working principles of move freely, organized themselves arbitrarily and without any administration is called Mobile Ad-hoc network (Wikipedia 2004). In a common, a route between the source to destination

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Identifying Black hole attack using Divide and Conquer Algorithm in Mobile Adhoc Network

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Abstract

Mobile Ad-hoc network is a collection of nodes which tries to communicate each other without any fixed infrastructure. In this network, nodes can move freely and dynamically from self-organized into arbitrary topologies. Due to self-organizing, the network is vulnerable to attack by an intruder who attempts to gain unauthorized access and damage data on communication medium. Transmitting of packet from source to destination is one of the greatest challenges because the packet should reach the destination without disturbances like delay, packet loss attacker and intruder etc. Black hole attack is kind of denial of service attack, where a node advertising itself as having shortest path to others nodes and commit other nodes to transfer packet through it, but black whole attacker do not forward the packet to the next hope. In this research article proposed an algorithm is used to identify a black hole attack in MANET. This algorithm is implemented using AODV protocol without changing the originality of Adhoc On-Demand Distance vector protocol. Proposed algorithm is implemented by using NS2, and results compared with AODV shows better performance in all aspects.

1.Introduction

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Research paper

Identifying the Node Presence Mobile Wireless Networks to Provide Location Based Services

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Abstract

Based on spatial and fleeting enormous information, location-based services (LBSs) get significant consideration because of their capability to make urban areas more brilliant. In any case, LBS gives the usefulness by extricating individual information from clients, which may bring about security spillage chance, for example, interruption, robbery, and unapproved offer of touchy data. Consequently, the mass piece of the pie of LBS relies upon the security of subjects ensured. Particularly contemplate the security threats in LBSs. Characterizing distinctive sorts of LBSs and investigating security spillage introduced every kind. In the wake of outlining the best in class chip away at location protection and question security, we propose an inquiry content safeguarding method with the point of furnishing precise LBS reply with null server learning on questions. At long last, we demonstrate some open issues that may develop future research on LBS insurance preservation.

1. Introduction

Location based service (LBS) is a progression of service available toward scell phones, fitting usefulness to existing positions or directions of clients or nodes. The premise of LBS originates from transient huge information gave by a colossal measure of cell phones through GPS and different correspondence systems (e.g., cell systems and WiFi). The vast sums and different sorts of spatial and worldly enormous information give LBS the possibility to give very customized and setting mindful services, which without a doubt facilitates natives' lives and lifts savvy urban communities. For instance, rudimentary LBSs offers route and hunt services, subordinate LBSs can enable subjects to find attractions, companions, and the closest accessible parking spaces, work out keen street making arrangements for suburbanites, etc.,

Be that as it may, as an ordinary enormous information application, the mass piece of the pie of LBS relies upon how well the security of residents can be ensured. This is on the grounds that a client needs to forfeit individual data to get LBS. Example; the look for purposes of intrigue (POIs) offers a LBS server the personality, position, and inquiry substance of a client. This data is exceptionally touchy on the grounds that the conduct design, inclinations, propensities, and interests of the client can without much of a stretch be induced from them. Once such data is sold to or recovered by enemies, spam publicizing or individual damage occasions, for example, following or theft may happen, convincing the assaulted clients to pull out of utilizing LBS. Elaborate on various classes of security dangers existing in various types of LBSs and in addition break down which part of a LBS system may include protection spillage. In the wake of investigating the best in class chip away at location protection and inquiry security, a question content safeguarding approach named the substance fixed container is proposed. This approach tells harmony comparing through benefit exactness and security spillage, giving precise LBS answers null server learning on questions, which implies the server can give exact administration not withstanding when it identify nothing about inquiry content. At long last. Whatever is left of the article is sorted out as takes after. The following segment arranges different kinds of LBSs, and recognizes the capacity and target of each sort. From that point forward, the security issue in LBSs is considered, trailed by a rundown of present work on controlling protection chance. Our questions preservation method is then represented; lastly some open problems are investigated.

2. Location Based Services

The market achievement of LBS profits by its rich administrations. Thinking about different average capacities and destinations, we arrange LBSs into two classes, that is, rudimentary administrations and subsidiary administrations. Route and look for POIs are run of the mill rudimentary LBSs. The previous rudimentary administration exploits situating frameworks to acquire land areas of clients and goals for managing individuals, which is the principle capacity of Google Maps, Baidu Map, and Auto Navi Map. This sort of administration started from in auto route frameworks and now wins in the cell phone advertise for exploring people on foot.

Consolidating with perception systems, for example, virtual actuality and increased reality, client undergo of route could be enhanced significantly. The last basic administration gives POIs to a client inside his or her district of intrigue (ROI). Such an administration can enable the client to find obscure ecological assets, which is especially valuable when s/he achieves another city.

In light of essential administrations, various subordinate ones are being made, giving more muddled capacities to comfort in individuals' lives. Run of the mill subsidiary LBSs comprise of

Internet of Things –Future Internet Technologies, Elements and Applications

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ABSTRACT

The idea behind Internet of Things is that every material object on the globe is connected to the Internet in essence. Accurately, things do not mold into computers, but they act similar. So, we are calling them as smart things.The IoT allows every physical object to be connected to the Net so that these are able to identify themselves to other devices and exchange data automatically. The technology, elements and applications are becoming major things of translations and innovation in the sector of communications in future, offering good benefits to people, consumers and industrial persons. The data is to be transmitted between different types of devices and improving the safety of transportation by using this technology.The IoT technology for the applications like healthcare (body/personal), home-automation, supply chain management, industry automation, agriculture and military is promised to deliver better results.The present revolution in the Internet, mobile and M2M technologies can be seen as the first cycle of the IoT.This paper gives an overview of some emerging technologies architectural elements and applications.

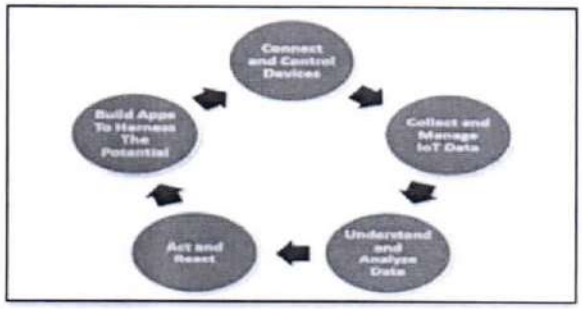
Keywords: *IoT, Home automation, healthcare, industry automation and agriculture.*

1. INTRODUCTION

In this world billions of thingswhich are interconnected by public or private IP networkscan sense and share information over the internet. The objects which are interconnected can collect the data frequently and do analysis for planning, managing and for making decisions. The concept of IoT was introduced by a member of RFID development community in the year 1999. After it became more famous to the practical world because of rapid growth in mobile devices, embedded systems, cloud computing, ubiquitous computing and data analytics. The IoT technology can play a crucial role to improve the quality of lives in the application fields liketransport, home appliances, healthcare, natural hazards and industrialautomation. The IoT sensors enable the physical objects to observe, hear, think and react to share data to make decisions.The transformationfrom traditional objects to smart objects be done by the technologies of IoT like ubiquitous computing, communication technologies, wireless sensor networks, Internet protocols and applications.

The below figure shows the five keys to tap the IoT values.In "Internet of Things", things refer to not only the electronic or electrical things but also the everyday objects, that can be addressable, manageable, legible, acknowledgeable and locatable through Internet, irrespective of the means of media (RFID, WLAN, etc.,). Everyday objects include not only the electronic devices but also,

- Human beings
- Locality of the objects
- Condition of objects



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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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

A Behavior based Malware Detection Approach for Android Smartphone

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Abstract

Today, ubiquitous devices set two important sides for the business. Although one side brings lot of potential in terms of reaching end-users, the other side mounts up huge number of malware. Particularly, Android mobile phones now symbolize an idyllic option for malware developers. This paper proposes a behavior based approach for detecting and preventing malicious activities of the processes inside the applications to be installed in Android devices. In order to appraise our system, we have taken 20 legitimate applications and 20 applications are malicious samples. The manual analysis and practical results show that our system is more efficient in malware detection and interruption in Android smart phones with high detection rate with minimal false positive.

Keywords: Android, Behavior, Mobile Malware, Security.

1. Introduction

Today, mobile phone technology is turning out to be the fast growing technology which becomes an essential communication tool for personal and business growth. Different mobile phones use different Operating System (OS). Android is the most popular OS and very efficient when compared to other OSes. According to [1], the world wide mobile phone sale to end-users has achieved over 1.5 billion at the end of 4Q 2017. Android OS is based on embedded Linux which is open source software available for free. Android platform provides easy way for programming interface. Malware writers not only targeting traditional computers, but they can also ensure that their creations run in mobile phone as well. McAfee Labs mobile threat report has found a 16 million mobile malware in the 3Q of 2017[2]. Thus, it becomes a major issue for preventing Android platforms from malware attacks. Behavior monitoring and interception techniques are widely used in security tools for desktop computers. So far, some achievement related to the behavior monitoring and interceptions in Android platform have been proposed. All of them are based on monitoring and intercepting system calls in kernel level. But monitoring malware activities at the kernel level is less encouraged. The most important reasons are listed as follows. First, it is not efficient. From user-mode we can enter into kernel-mode through system call interface provided by the OS.

JAVA Application Programming Interface (API) to be invoked by the Android application will resolve into many system calls and monitoring and intercepting system calls in kernel level will affect all other running processes. Secondly, it is not applicable for real Android devices. Because, device cannot use loadable kernel module and developer cannot run the code without recompiling

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Research paper

A comprehensive study on image segmentation

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Abstract

With the evolution of computing, there is an acceleration in the use of image processing techniques in various applications, image segmentation, a procedure in which images are divided into many segments and with this, it's possible to identify the region of interest from an image. The main idea of this comprehensive study is to present various existing segmentation techniques.

Keywords: Image Segmentation; Thresholding; Clustering; Soft Computing Approaches; Region-Based Segmentation

1. Introduction

The main objective of the image processing is to fetch information which is important from the specified image in such a manner that it doesn't make any changes in the other image features. Preprocessing of the image is the foremost and important step [1], [2] after performing preprocessing you can do any kind of operation on that resultant image. One of the most important stage in image processing is image segmentation. Radiology can be defined as a series of tests used to create images of the body parts which helps us to diagnose, screen and monitor the health condition.
There are various types of radiology such as X-rays, CT scan (computed tomography scan), MRI (magnetic resonance imaging) and ultrasound. Health professionals use these radiology imaging types for learning what is happening inside your body.

2. Common types of imaging include:

CT Images also referred as CAT scan which is responsible for generating images by combining multiple X-ray projections taken from different angles. CT images give an accurate view of certain body parts like lungs, heart, bones and blood vessels. Health professionals also consider this imaging method for diagnosing many cancers. Magnetic Resonance Imaging (MRI) is used to create detailed images of organs and tissues which is generated using radio waves and a magnetic field. By differentiating normal and diseased images of the body it is proven to effectively diagnose a number of conditions. Positron Emission Tomography (PET): Positron Emission Tomography (PET) is a nuclear imaging technique which generates images by making use of scanner and a small amount of radiopharmaceuticals is injected into the veins of patients. These images provide information to health professionals about the functioning of the various tissues and organs. PET-CT, to take more accurate decisions health professionals combine PET and CT which generates a superposed image. Ultrasound, it is also referred as sonography and it's working will be like, it sends sound waves into the body and based on the echoes coming from the body it creates an image.

3. Image segmentation

Image Segmentation, it's a process where an image is fragmented into multiple segments, each segment denotes some useful information in terms of color, intensity, texture to the user. Color, intensity, and texture are very important properties of an image with which each segment can be differentiated by assigning different color, intensity and texture values to every pixel.
Image segmentation and their types and the, applications of image segmentation are medical image processing to diagnose the presence of tumors and for classification of cancer cells etc. Image segmentation technique selection is done based on the application like noise removal in the bio-medical images, image retrievalssatellite image, machine vision, military, computer vision [3], [4], feature extraction and object recognition.
There are Humpty number of image segmentation techniques and among various techniques, there is no one method that can be used with all types of images, for this reason segmentation techniques are categorized into three types they are classical, AI and Hybrid techniques the following figure shows various image segmentation techniques.

A Global Dispatcher Load Balancing (GLDB) Approach for a Web Server Cluster

Kadiyala Ramana, M. Ponnavaikko and A. Subramanyam

Abstract With the volatile expansion of the internet, numerous innovative online applications and services are in development. In conventional internet architecture, the innovative disputes are imposed by the fashionable applications. By using multiple servers, web server performance is improved and the effectiveness of a simulated web server system depends upon the process of distributing client requests. The distribution of client requests must occur in a way that is transparent to users among multiple server nodes, which affects availability and scalability in the distributed web server system. Thus, in this study, an efficient load balancing architecture called global dispatcher-based load balancing (GDLB) is proposed, which uses both domain name system and dispatcher. With this approach, performance is estimated to be better than with existing approaches. To analyze performance, a JMeter testing tool is used for dynamic load generation and performance measurement in a real-life internet scenario.

Keywords World Wide Web · Response time · Load balancing
Web server · Cluster

1 Introduction

Over the past two decades the World Wide Web (WWW) has seen implausible developments and provided enormous opportunities for the exploitation of a wide range of web services, making them accessible to a massive number of online users.

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Article

A Laplacian Probabilistic graph modeling for clustering multi-Valued Data Sets

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Abstract

: Clustering multi-valued data is a growing challenge in data mining mostly due to the multiple data interval values for an individual feature. It is an open problem in data analysis application to identify a suitable clustering model for such unsupervised multi-value data distribution. In order to answer this problem, a Laplacian probabilistic graph model based feature selection is proposed in this paper. The problem is mainly due to the difficulty in identifying the class information and the multiple values for each individual features. We explore the problem of unsupervised feature selection through computing the Laplacian probabilistic score and multi-value data reformation for effective clustering in multivariate datasets. By minimizing reform clustering errors, we can preserve the similarity and classification information of the original data content. The proposed approach evaluates clustering purity and normalized mutual information for multivariate data sets. Experimental evaluation shows the improvisation of the proposed approach.

Evaluation of Selected Tree- and Mesh-Based Routing Protocols

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| pp 427–438 | Cite this conference paper

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T. Harikrishna & A. Subramanyam

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International Conference on Communications and Cyber Physical Engineering 2018

Abstract

This paper researches various routing protocols, problems and necessities comparatively in MANET routing and layout concerns which include classifications primarily based on layers

SOSIoT: SOS optimisation to leverage the energy efficient internet of things based on route search optimisation

K. Suresh and M. Rajasekhara Babu

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Abstract

Internet of things (IoT) has become popular in smart vision of world development. It is more and more complex due to billions of heterogeneous wireless devices communicating each other. Each wireless sensor node or device consumes more energy for its communication. There are various techniques for reduction of this energy such as low energy routing algorithm by using particle swam optimisation (PSO) and advances in heuristic techniques with symbiotic organism search (SOS). But these techniques are inefficient due to direct deployment of sensor nodes in the network without considering the more energy consume when transmitting. This paper proposes an SOS internet of things (SOSIoT) technique that deals and regulates energy factors in IoT efficiently. It is a self-adaptive technique that aims to minimise the energy harvesting in significant manner on IoT. Finally, it presents a comparative result against existing methods on energy consumption factors. The impact of SOSIoT and optimal techniques battery life of smart devices increased up to the 40% to 60%.

Keywords

internet of things, IoT, wireless network, energy efficient technique, symbiotic organism search, SOS, optimisation

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Casson Fluid Flow Over A Vertical Porous Plate Under The Existence Of Cross Diffusion Effects In Conducting Field

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Abstract

An attempt has been made to examine the flow characteristics of Casson fluid flow along a vertical porous plate under the consideration of diffusion thermo and thermal diffusion effects. The influence of heat generation, thermal radiation and chemical reaction is also studied. The governing equations pertinent to the flow are solved by applying finite differene scheme. The effects of related physical parameters on the velocity, temperature and concentration profiles are discussed through graphical presentations. Further the nature of skin-friction, Nusselt number and Sherwood number is analyzed and presented numerically in the tabular form. The influence of thermal diffusion leads to enhance and the existence of chemical reaction diminishes the species concentration.

Keywords: *Casson fluid, Soret number, Dufour number, Thermal radiation, Chemical reaction and Conducting field.*

1. Introduction

The study of characteristics of non-Newtonian fluids is one of the important and interesting topics for scholars and scientists having direct or indirect affiliation with the field of fluid science. Non-Newtonian fluids have nonlinear relationship between strain rate and stress while in Newtonian fluid it is in linear mode. On the other hand, fluid flow properties are different in any way from that of the Newtonian fluid is called a non-Newtonian fluid. Some examples of non-Newtonian fluids are salt solutions, molten polymers, ketchup, custard, toothpaste, starch suspensions, paints, blood and shampoo.

It is an important scientific discovery to note that, in real industrial applications, non-Newtonian fluids are more significant due to their applications in petroleum drilling, polymer engineering, certain separation processes, manufacturing of foods and paper and some other industrial processes [1]. Due to the nonlinearity between the stress and the rate of strain for non-Newtonian fluids, it is difficult to express all those properties of several non-Newtonian fluids in a single constitutive equation. This has called on the attention of researchers to analyze the flow dynamics of non-Newtonian fluids. Consequently, several non-Newtonian fluid models have been designed depending on various physical parmeters. Pramanik [2] studied and established Casson fluid flow and heat transfer past an exponentially porous stretching surface in presence of thermal radiation. Qasim and Noreen [3] considered heat transfer in boundary layer flow in a casson fluid over permeable shrinking sheet with viscous dissipation. Das et al. [4] analyzed Newtonian heating effect on unsteady hydromagnetic Casson fluid flow past a flat plate with heat and mass transfer. Chandra Reddy et al. [5-8] considered and analyzed MHD boundary layer flows of a visco-elastic fluid as well as Rivlin-Ericksen fluid past a porous plate with different parameters and boundary conditions. Ananda Reddy et al [9] discussed radiation and Dufour effects on laminar flow of a rotating fluid past a porous plate in conducting field. Rama Mohan Reddy et al. [10] studied thermal diffusion and Joule-heating effects on magnetohydrodynamic

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Haunting Hungers: A Study of Bhabani Bhattacharya's *So Many Hungers!*

Abstract

So Many Hungers! was published in October 1947, soon after India achieved independence. But, it covers the war years with their uncertainties, agonies, cruelties, and frustrations. The fusion of the traditional and modern values is the most conspicuous feature of Bhattacharya's writings. As K.R. Chandrasekharan observes, "With his progressive ideas and his vision of a glorious future, he has also great admiration for the spiritual and cultural heritage of the country. Like the great men whom he admired, particularly Tagore and Gandhi, he is also a builder of bridges between the present and past."

As to how he became a novelist, Bhabani Bhattacharya recalls, "The great famine swept down upon Bengal. The emotional strings I felt (more than two million men, women and children died of slow starvation amid a man-made scarcity) where a sheer compulsion to creativity. The result was the novel *So Many Hungers!*."The novel unfolds the story of hunger that killed two million men, women and children in Bengal. In fact, Bhattacharya succeeded in weaving "motifs of different types of hunger into a thematic fabric in order to reassert a positive faith in the basic human values. Hunger becomes a symbol depicting man in the midst of things, man set upon by things, man confused and facing that inner real self whose existence perhaps he never felt sure of. In this novel, the motif of hunger becomes the central metaphor."

The central theme of *So Many Hungers!* is the twin hunger for food and for freedom. The plot of the novel consists of two strands - the story of the young scientist Rahoul and his family, and that of the peasant girl Kajoli and her family. The story of Rahoul exemplifies the theme of hunger for freedom and the story of Kajoli exemplifies the theme of hunger for food. The two families live far apart. Rahoul's family in Calcutta and Kajoli's in a small village called Baroni. As G.S. Balarama Gupta points out, "*So Many Hungers!* is woven

RESEARCH ARTICLE

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Chemmeen : The World of Fishermen

Abstract

Thakazhi Sivasankara Pillai's *Chemmeen*has been set in a village of fishermen community in South Kerala. *Chemmeen* couples the lives and dreams of ordinary people with their aspirations and superstitions. The story of *Chemmeen* depicts the traditions, age old beliefs, and the miseries of fishing community. At the same time, the novel directs the greediness of a man which led to a disastrous end. Myth among the fishermen community is the major theme of the novel. The novel acquires the quality of a fable in which life in the fishermen community is depicted with great emotional impact. The customs, taboos, beliefs, rituals and the day-to-day business of living through the pain of existence are the thematic elements of the novel. In the present paper, I would like to focus on the existing myths and living style of fishermen community with reference to Thakazhi's *Chemmeen*, a Malayalam novel.

Key words: Fishing community, myth, superstitions

The world acclaimed Malayalam novel, *Chemmeen* is authored by Thakazhi Sivasankara Pillai, a famous Malayalinovelist and short story writer whose works focus on the oppressed classes. The novel was published in 1956 in Malayalam and translated into many languages through which it has won international acclaim. It was translated into English in 1962 by Narayana Menon at first. Later Anita Nair also translated this novel into English with the original title *Chemmeen* (The enduring classic). Thakazhi acclaimed international reputation for narrating this novel. He won the Kendra Sahitya Academy Award in 1958 and the Jnanpith Award in 1984 for his unique narrative style. *Chemmeen* is a masterpiece and a mesmerizing seaside story. *Chemmeen* is a realistic fictional tragedy which portrays the lifestyle of fishermen folk in Kerala. Thakazhi brings out the simple story in its brief detailing, but manages to enthrall readers all over the world.*Chemmeen* is a story of hope and hopeless love of Karuthamma, a greedy Hindu fisherman's daughter and

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Impact of Thermal in Stokes Second Problem for Unsteady Second Grade Fluid Flow

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Abstract- This paper tosses light on the impact of thermal in Stokes second problem for unsteady second grade liquid move through porous medium. The expressions for the temperature field and the velocity field are acquired scientifically. The impacts of different rising parameters on the velocity field and the temperature field are considered through graphs in detail.

Keywords: Unsteady Second grade fluid, Porous medium, Thermal.

1 INTRODUCTION

Recently, the study of non- Newtonian fluids drew considerable attention due to their pragmatic applications. As the non- Newtonian fluids and its applications are being vital in modern technology and industries, research on such fluids are imminent. A great number of technologically and industrially vital fluids such as polymers, molten plastics, fossil fuels, foods and, pulps which may douse in underground bedsteads, display non-Newtonian behavior. Many non-Newtonian fluid prototypes have been proposed, owing to density of fluids and their properties. Therefore this category of non-Newtonian fluids, second grade fluid is the modest subclass for an analytic solution can be practically possible to discover. If the non- Newtonian fluids correspond to physically realistic situations, meticulous analytic solutions for the flows of such fluids are most likely to find, as they serve a dual purpose. Firstly, they deliver a resolution to the flow that has technical bearing. Secondly, the solutions aforementioned can be used as authorizations against intricate arithmetical cods that have been brought up for much more complex flows. Non-Newtonian fluids were studied under different Physical aspects in the recent past by Hayat et al., [2], Fetecau and Fetecau[1], Chen et al., [3], Tan and Masuoka, [5], Fetecau and Fetecau, [4].

Chauhan and Olkha [6] ventured to study the impact of space temperature dependent hear source/sink whrn heat radiation over porous stretched sheet was present. Different models of the second grade liquid issue have been contemplated by Hayat et al. [8], Baris and Dokuz [7],. Khan et al. [10], Makanda et al. [12], Hameed et al. [9] and Akinbobola [11] are contemplated magnetic and heat transfer in a vertical tube on the peristaltic transport of a second grade liquid.

The impact of temperature subordinate viscosity on viscoelastic liquid, for example, second grade liquid causes changes in the properties of the liquid. For gases, the viscosity increments as temperature increments while for fluid it diminishes as temperature increments. Thus, a lot of research work has been committed to think about the impacts of many variable consistency models.

Massoudi and Phuoc [13] utilized Reynolds Viscosity model to research the impact of variable viscosity in a completely developed flow of non-Newtonian fluid down a heated inclined plane. A similar Reynolds law was utilized in summed up second gradefluid between two vertical parallel dividers by Massoudi et al. [14]. Ramya et al [15] Studied the impacts of temperature dependent viscosity on flow and heat transfer in a viscoelastic liquid in a permeable medium. They accepted that the viscosity shifts conversely as a component of temperature. Different unidirectional transient flows of a second grade liquid in a space with one limited measurement are considered by R Bandelli et al [16].

The development of a viscoud liquid caused by the sinusoidal faltering of a level plate is named as Stokes' second issue by Schliching [17]. At first, both the plate and fluid are thought to be very still. At time t = 0+, the plate all of a sudden begins oscillating with the velocity $U_0 e^{i\omega t}$. The investigation of the flow of a viscous fluid over a swaying plate isn't just of principal hypothetical premium yet it likewise happens

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RADIATION AND DUFOUR EFFECTS ON LAMINAR FLOW OF A ROTATING FLUID PAST A POROUS PLATE IN CONDUCTING FIELD

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ABSTRACT

A theoretical investigation has been performed to describe the laminar flow of a rotating fluid past a porous plate in conducting field with variable temperature and variable concentration taking into account the chemical reaction, radiation and Dufour effects. The non-dimensional governing equations are solved numerically by using finite difference scheme. The effects of different physical parameters on velocity, temperature and concentration are presented and discussed with the help of graphs. Also the numerical values for local skin friction, Nusselt number and Sherwood number are recorded and analyzed. Increasing values of heat source parameter results in rising of the temperature, but it falls down in the case of heat sink parameter.

Keywords: Laminar flow, Rotating fluid, Finite difference scheme, Thermal radiation and Dufour effect.

1. INTRODUCTION

Radiation is the processes by which heat energy is transmitted from one place to another without the aid of any material medium. When a body is hot, the energy of vibration of the atoms and molecules is sent out from it in the form of radiant heat waves. These waves when falling on another body induce the molecules to vibrate there and hence the body is heated up. In many fluid–particle flows, thermal radiation effects play an important role in altering the heat transfer characteristics. Muthucumaraswamy and Visalakshi (2011) studied radiative flow and heat transfer past an exponentially accelerated vertical plate with uniform mass diffusion. Effects of thermal radiation and porosity on MHD mixed convection flow in a vertical channel using homotopy analysis method were also carried out by Srinivas and Muthuraj (2010). Raptis *et al.* (2003) studied the effects of radiation in an optically thin gray gas flowing past a vertical infinite plate in the presence of a magnetic field. Ananda and Varma (2010) studied radiation effect on MHD couette flow with heat and mass transfer between two parallel plates. Raju *et al*. (2014) presented an analytical study of MHD free convictive, dissipative boundary layer flow past a porous vertical surface in the presence of thermal radiation, chemical reaction and constant suction. Kumar (2013) discussed radiative heat transfer with MHD free convection flow over a stretching porous sheet in the presence of heat source subjected to power law heat flux. Ali *et al*. (2013) studied the influence of thermal radiation on an unsteady free convection MHD flow of Brinkman type fluid in a porous medium with Newtonian heating. Ahmed and Kalita (2013) discussed magneto hydrodynamic transient flow through a porous medium bounded by a hot vertical plate in the presence of radiation. Chandrakala (2011) analyzed radiation effects on flow past an impulsively started vertical oscillating plate with uniform heat flux. Chandra Reddy *et al*. (2016) studied the properties of free convective magneto-nanofluid flow past a moving vertical plate in the presence of radiation and thermal diffusion.

In a moving fluid, if heat and mass transfer occur simultaneously, the relations among the dynamic potentials and fluxes are of more considerable. It has been recognized that energy flux will be formed by temperature gradients as well as concentration gradients. The energy flux formed by a concentration gradient is treated as the diffusion-thermo effect or Dufour effect. Bhargava *et al*. (2009) considered cross diffusion effects on the fluctuating hydromagnetic flow under thermal and mass buoyancy. Thermo diffusion and chemical effects with simultaneous thermal and mass diffusion in mixed convection flow with ohmic heating were explained by Reddy and Varma (2011). Tsai and Huang (2009) studied theoretically heat and mass transfer consequences on Hiemenz flow in a porous boundary through a stretched surface under the occurrence of species diffusion and thermal diffusion. Narayana and Sibanda ((2010) discussed the soret and dufour effects thoroughly on a wavy surface in Darcy porous media. Seddeek (2004) established diffusion-thermo and thermal-diffusion influence on the flow over an accelerating surface with heat generation and blowing/suction for the particular case of mixed convection and changeable viscosity.

The topic of rotating flows has received wide interest in modern fluid dynamics research. Excellent treatises on this subject with applications in geophysics and planetary sciences have been in the literature since the early 1950s. The coupled effects of heat transfer and rotational hydrodynamics have largely been inspired by applications in chemical engineering and manufacturing processes in the chemical industry. Ganapathy (1994) presented a note on oscillatory Couette flows in a rotating system. Singh (2000) analyzed an oscillatory hydromagnetic Couette flow in a rotating system. Ghosh (1993) studied an unsteady hydromagnetic flow in a rotating channel with oscillating pressure gradient. Seth *et al.* (2014) analyzed oscillatory hydromagnetic Couette flow in a rotating system with induced magnetic field. Seth *et al*. (2013) discussed the effects of thermal radiation and rotation on unsteady hydromagnetic free convection flow past an impulsively moving vertical plate with ramped temperature in a porous medium.

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Vocabulary Acquisition through Role Plays and Dialogues

Abstract:
Role Plays and dialogues have been used since a long time by the teachers in second language classroom and they are popular and easily attract the attention of students when enacted. Role plays are the forms of extended dialogues and are part of the repertoire of practice activities and materials. In English language teaching the use of role-plays and situational dialogues has changed over a period of time as the teachers have been experimenting and finding innovative ways of providing students with meaningful materials and content to simulate real life situations. As a matter of fact, dialogues and role plays involve the language learners in real time communication. This paper attempts to explore how Role plays an important role in vocabulary acquisition through role-plays and situational dialogues in a second language class room.

Keywords: Role Plays, Dialogues, vocabulary, Second language Classroom, English Language Teaching

Magneto-convective and radiation absorption fluid flow with variable temperature and concentration in the presence of thermal diffusion

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Abstract - In this paper, we have investigated an unsteady, magneto hydrodynamic, convection flow of a fluid past an infinite permeable plate in the presence of thermal diffusion. A transverse magnetic field of uniform strength is applied perpendicular to the plate along the direction of the flow. The non-dimensional governing equations have been solved by using finite difference 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.

Key words: MHD, Radiation, Soret number, Finite difference method, Thermal diffusion.

I. INTRODUCTION

MHD is an important branch of fluid dynamics. The studies on MHD are concerned with the association of electromagnetic fluids and electrically conducting fluids. When a conducting fluid moves through a magnetic field, an electric field and consequently current may be induced and, in turn the current interacts with the magnetic field to produce a body force. MHD interactions occur both in nature and new man-made devices. MHD flow occurs in the sun, interior of the earth, the ionosphere, the stars and their atmosphere, to mention a few. MHD is directly utilized in laboratory in making new devices such as propulsion units and power generators or which involve fluid –electromagnetic field interactions, such as electron beam dynamics, travelling wave tubes, electrical discharges and many others. Afify [1] analyzed MHD free convective flow and mass transfer over a stretching sheet with chemical reaction. Chamkha and Ahmed [2] studied similarity solution for unsteady MHD flow near a stagnation point of a three dimensional porous body with heat and mass transfer, heat generation/ absorption and chemical reaction. Das and Mitra [4] deliberated unsteady mixed convective MHD flow and mass transfer past an accelerated infinite vertical plate with suction. Harinath Reddy et al. [5] studied unsteady MHD free convection flow of a Kuvshinski fluid past a vertical porous plate in the presence of chemical reaction and heat source/sink. Hayat and Mehmood [6] considered slip effects on MHD flow of third order fluid in a planar channel. Kim [8] studied unsteady MHD convective heat transfer past a semi – infinite vertical porous moving plate with variable suction. Makinde and Mhone [9] found heat transfer to MHD oscillatory flow in a channel filled with porous medium. Sharma and Singh [23] analyzed effects of variable thermal conductivity and heat source/sink on MHD flow near a stagnation point on a linearly stretching sheet. Umamaheswar et al. [26] analyzed unsteady MHD free convective visco-elastic fluid flow bounded by an infinite inclined porous plate in the presence of heat source, viscous dissipation and Ohmic heating.

Radiation is the processes by which heat energy is transmitted from one place to another without the aid of any material medium. When a body is hot, the energy of vibration of the atoms and molecules is sent out from it in the form of radiant heat waves. These waves when falling on another body induce the molecules to vibrate there and hence the body is heated up. In the case of conduction and convection the intervening medium takes an active part in the process. But in the case of radiation the intervening medium has no such function. For example the radiation from the sun travels through vacuum and then through the atmosphere and reaches us. So even without the aid of any material medium heat energy is transmitted. Radiation from hot bodies consists of electromagnetic waves of higher wavelengths, radiation energy is also found beyond the violet and it is called ultraviolet. When infrared radiation falls on the skin, it gives the sensation of warmth. Ultraviolet radiation is absorbed by human skin and causes sun-burn; it stimulates the formation of vitamin D which is necessary for the assimilation of calcium and the prevention of rickets. Green plants produce carbohydrates from water and carbon dioxide by using absorbed ultraviolet radiation. This process is called photosynthesis. Radiation travels in a straight line with the speed of light. It is reflected and

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PREMCHAND'S GODAN – A PORTRAYAL OF THE QUALITIES OF AN IDEAL INDIAN WOMAN

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***ABSTRACT*:** *Godan* is an Indian regional novel written by Munshi Premchand, who is an Urdu and Hindi writer of progressive period. *Godan* is the last and highly acclaimed novel of Premchand. The novel set up in a small village of Uttar Pradesh named Belari. *Godan* reflects the real face of the society and various sections or communities of India. Many realistic characters belong to various classes and communities are presented in the novel. Social reality of rural India appears in the novel like a moving document. Premchand touches the emotions of common readers and creates awareness of the realistic social scene of Indian villages by portraying many male and female roles. The female characters in the novel are lively and depict the true picture of women in pre-independence period. Premchand describes a traditional house wife's life and a modern woman's nature with equal priority. With the help of a few female characters like Dhaniya, Malti etc. Premchand highlights the qualities of an ideal woman in India. In this paper, I would like to analyze the female characters and their status through the depiction of the qualities or traits of an ideal Indian woman with reference to Premchand's *Godan*.

***Key words*:** Social reality, Female characters, Qualities of ideal woman, Modern and traditional women.

Godan is the creation of Munchi Premchand. The novel was written in Hindi and first published in 1936. Later it was translated into English in 1957 by Jai Ratan and P.Lal. All the novels and short stories of Premchand allow every reader to analyze different dimensions of each character and touch the hearts of common readers. Though he is not alive, even today also he lives in the hearts of millions. His works are thought provoking and touches everyone and especially the underprivileged. The theme of all his works is 'society', and its issues.

Premchand's Godan is a saga of social realism and about the miserable conditions of a peasant family. Exploitation of poor farmers by money lenders and the socio-economic affairs of the protagonist of the novel, Hori and his family narrated in the novel with realistic sense. Hori represents the Indian peasant's life and the hurdles he faces. Premchand captures life and death situations in Hori's life until his death in the novel, which purges the emotions of a common reader. The title of the novel *Godan* actually refers to, "the gift of a cow" usually given away to a Brahman by a pious Hindu as part of funeral rites, but the longing desire of Hori to buy a cow of his own during his lifetime, remains unfulfilled.

> Hori for a long time had been cherishing this desire for a cow. It was the brightest dream of his life, his greatest ambition. (p.7)

Though Hori doesn't have any money to buy a cow, he gets a cow in loan from Bhola, the cowherd of the village. But he fails to protect the cow. The sacrilegious death of the cow by Heera, the brother of Hori brings all the troubles to the family. Hori's struggles to run his family, Gobar, the son of Hori departure from home; too money debts, pressure of money lenders, Sona's marriage, and social status leave the novel with tragic end. By the end of the novel, Dhaniya donates twenty annas to Datadin a Brahman, which she had earned from the sale of yarn. She requests Datadin to accept the amount in place of a cow in charity.

> Dhania rose like a machine, went in and brought out twenty annas which she had earned from the sale of yarn. Placing the coins in the icy palm of her husband, she looked at Datadin. "Maharaj, there's neither a cow, nor a calf nor any money in the house. This is all the money I have; this is all I can give. Take this in place of the cow."(p.352)

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Three dimensional Heat and mass transfer analysis of Al_2O_3 nanofluid over a stretching sheet

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Abstract: This paper mainly focuses on the three dimensional heat and mass transfer analysis of Al_2O_3 nanofluid over a stretching sheet in view of enhancement of thermal conductivity and hence more heat transfer capability of nanofluid. The non-linear partial differential equations have been converted into strong non-linear ordinary differential equations by employing suitable transformations and these transformed equations are solved by Runga-Kutta method of fourth order along with Shooting technique. The results are presented through graphs for various parameters on velocity, temperature, concentration.

Key words: MHD, heat and mass transfer, Al_2O_3, Stretching sheet.

I. INTRODUCTION

It is well known that nanofluids are a new class of nanotechnology-based heat transfer fluids engineered by dispersing nanometer scale solid particles whose length scales is between 1 nm to 100 nm in traditional heat transfer fluids. Choi [1] was the first who introduced the term 'nanofluids'. Several industrial applications of nanofluids include improved heat transfer, chemical production, power generation in a power plant, automotives, microelectronics production, advanced nuclear systems, micro channel cooling. Therefore, a significant research interest has been carried out in recent years due to wide range of applications of nanofluids [2]-[4]. In the presence of spherical Au-Metallic Zubair et al.[5] analyzed and investigated the heat and mass transfer analysis of MHD nanofluid flow with radiative heat effects. In porous media over a permeable stretching/shrinking sheet Bhatti et al.[6] investigated and stuided new numerical simulation of MHD stagnation-point flow with heat transfer. Khan et al.[7] studied boundary layer flow of a nanofluid past a stretching sheet. Over a stretching sheet Sravan Kumar et al.[8] discussed a comparative study of thermal effects on MHD flow and heat transfer of nanofluids. On mass transfer Hayat et al.[9] studied three-dimensional flow of a visco elastic fluid. Nayak et al.[10] explained three-dimensional free convective MHD flow of nanofluid with thermal radiation over permeable linear stretching sheet.

From the above literature I noticed the scope of studying 3D heat and mass transfer analysis of Al_2O_3 nanofluid over a stretching sheet. The present work is the extension of the work of Nayak et al.[10] to analyze three dimensional heat and mass transfer analysis of Al_2O_3 nanofluid over a stretching sheet.

II. FORMULATION OF THE PROBLEM

Consider a steady three-dimensional incompressible electrical conducting free convective nanofluid flow past a permeable stretching sheet. The physcial representation of the problem is shown in Fig. 1.Assume that a transverse magnetic field of uniform strength B_0 is applied parallel to the z-axis. The magnetic Reynolds number is assumed to be small so that the induced magnetic field and impressed electric field are neglected.

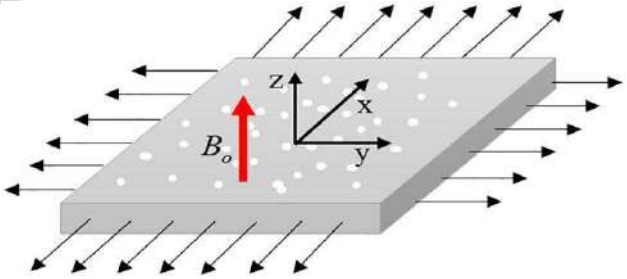

Fig.1 Physcial representation of the problem.

The governing equations (Nayak et al.[10]) based on the assumptions are as follows.

$$\frac{\partial u}{\partial x}+\frac{\partial v}{\partial y}+\frac{\partial w}{\partial z}=0 \tag{1}$$

$$u\frac{\partial u}{\partial x}+v\frac{\partial u}{\partial y}+w\frac{\partial u}{\partial z}=\frac{1}{\rho_{nf}}\left\{\mu_{nf}\frac{\partial^2 u}{\partial z^2}+(\rho\beta)_{nf}g(T-T_\infty)+(\rho\beta^*)_{nf}g(C-C_\infty)-\sigma B_0^2\bar{u}\right\} \tag{2}$$

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Joule Heating Influence On Mhd Casson Fluid Over A Vertical Porous Plate In The Presence Of Thermal Diffusion And Chemical Reaction

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Abstract- This paper reveals a theroritical analysis on the influence of Joule heating influence on MHD Casson fluid flow past a vertical plate. The impact of porous medium, thermal radiation, thermal diffusion and chemical reaction are also taken into consideration. The non-dimensional governing equations are solved by applying finite difference scheme and the variations in velocity, temperature and concentration are explained with the numerical data presented in the form of graphs. Skin friction, rate of heat transfer and rate of mass transfer of the flow are studied by using tabulated values. The influence of Eckert number leads to enhance the velocity as well as temperature. The concentration of the fluid decreases under the impact of chemical reaction.

Keywords: Casson fluid, Joul heating, porous medium, thermal radiation, thermal diffusion and chemical reaction.

1. INTRODUCTION

The non-Newtonian fluid model is one of the Casson fluid models which were introduced by Casson in 1995. It is based on the model structure and its behavior of both liquid and solid of a two-phase suspension that exhibits yield stress. Casson fluid is well known for shear thinning liquid which is formed to an infinite viscosity at zero, if the shear stress is less than the yield stress is applied to the fluid; it's like a solid, if the shear stress larger than yield stress is applied, and its starts to move. Examples of Casson fluid are as follows: Jelly, tomato sauce, honey, soup, concentrated fruit juices. Human blood also treated as Casson fluid. Pramanik [2] investigated Casson fluid flow and heat transfer past an exponentially porous stretching surface in presence of thermal radiation. Qasim, and S. Noreen [3] studied heat transfer in boundary layer flow in a Casson fluid over permeable shrinking sheet with viscous dissipation. Das et. al. [4] who considered Newtonian heating effect on unsteady hydromagnetic Casson fluid flow past a flat plate with heat and mass transfer. Ullah et al. [5] analyzed hydromagnetic Falknerskan flow of Casson fluid past a moving wedge with heat transfer. Mukhopadhyay and Mandal [6] established the boundary layer flow and heat transfer of a Casson fluid past a symmetric porous wedge with surface heat flux. Makanda et al. [7] studied the effect of radiation on MHD free convection of a Casson fluid from a horizontal circular cylinder with partial slip in non-Darcy porous medium with viscous dissipation. Sidha reddy et al. [8] considered effects of radiation on MHD radiating fluid embedded in porous medium. Reddy et al. [9] investigated the effects of Joule heating and radiation absorption effects on MHD convective and chemically reactive flow past a porous plate. Loganathan and Sivapoornapriya [10] have analyzed Ohmic heating and viscous dissipation effects over a vertical plate in the presence of porous medium. Goyal and Sunitha [11] studied the effect of MHD free convective flow over a vertical porous surface with Ohmic heating, thermal radiation and chemical reaction. Chen [12] have considered combined heat and mass transfer in MHD free convection from a vertical surface with Ohmic heating and viscous dissipation. Umamaheswar et al. [13] have considered unsteady MHD free convective visco-elastic fluid flow bounded by an infinite inclined porous plate in the presence of heat source,

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Heat transfer effect on an oscillatory flow of Jeffrey fluid through a porous medium in a tube

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Abstract

In this paper, we examined the impact of heat transfer on oscillatory flow of Jeffrey fluid through a permeable medium in a circular tube. The expressions for the temperature field and velocity field are obtained analytically. It is discovered that the velocity field increases with increasing or , while it decreases with increasing or . Additionally It is observed that, the temperature field decreases with increasing .

Keywords: *Heat transfer, oscillatory flow, Jeffrey fluid and porous medium*

1. Introduction

The examination of oscillatory flow of a viscous fluid in cylindrical tubes has received the consideration of numerous specialists as they assume a critical job in understanding the imperative physiological issue, specifically the blood flow in arteriosclerotic blood vessel. Womersley [17] have looked into the oscillating flow of thin walled elastic tube. Detailed estimations of the oscillating velocity profiles were made by Linford and Ryan [10], Unsteady and oscillatory flow of viscous fluids in locally constricted, rigid, axisymmetric tubes at low Reynolds number has been thought about by Ramachandra Rao and Devanathan [14], Hall [9] and Schneck and Ostrach [15]. Haldar [8] have thought about the oscillatory flow of a blood through an artery with a mild constriction. few different specialists, Misra and Singh [11], Ogulu and Alabraba [12], Tay and Ogulu [16] and Elshahed [7], to make reference to however a couple, have in one way or the other modeled and studied the flow of blood through a rigid tube under the influence of pulsatile pressure gradient.

Lalithajyothi et al. [1] contemplated the pulsatile flow of a jeffrey fluid in a circular tube having internal porous lining.Vajravelu et al. [2] examined the unsteady flow of two immiscible conducting fluids between two permeable beds. Spurred by the above examinations, pulsatile flow of a Jeffrey fluid between permeable beds is investigated. The influence of melting heat transfer and thermal radiation on MHD stagnation point flow of an electrically conducting Jeffrey fluid over a stretching sheet with partial surface slip is performed by Das et al.[3]. Sreenadh et al. [4] explored free convective flow of a Jeffrey fluid in a vertical deformable porous stratum. They observed that the skin friction gets reduced when the porous material is a deformable one and seen that the impact of increasing Jeffrey parameter is to increase the skin friction in the deformable porous stratum. Nallapu and Radhakrishnamacharya [5] studied Jeffrey fluid flow in the presence of magnetic field through porous medium in tubes of small diameters. The impact of slip and heat transfer on the peristatic transport of Jeffrey fluid in a vertical asymmetric channel in porous medium is talked about by Lakshminarayana et al. [6]. Farooq et al.[13] are steadied MHD flow of a Jeffery fluid with Newtonian heating .Kavith et al[18] are analyzed per static transport of a Jeffery fluid in consistent with Newtonian fluid in an inclined channel. Ali et al.[19] are talked about logical solution for oscillatory flow in a channel for Jeffery fluid .

In perspective of these, we inspected the effect of heat transfer on oscillatory flow of Jeffrey fluid through a porous medium in a circular tube. The expressions for temperature field and the

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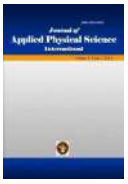

MHD HEAT GENERATING/ABSORBING AND RADIATING FLUID PAST A POROUS PLATE

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AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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Original Research Article

ABSTRACT

The aim of the present work is to analyze the characteristics of magnetohydrodynamic free convective radiating fluid past a porous plate in the presence of thermal diffusion and heat source/sink along with variable temperature and concentration. An exact solution has been employed by usual Laplace transform technique. The effects of diverse parameters on velocity, temperature and concentration are discussed through graphical representations. Also the variations in shear stress, rate of heat transfer and rate of mass transfer under the influence of some parameters are discussed with the help of tables. In the presence of heat source the fluid velocity and temperature increases whereas the concentration decreases. Increasing values of Soret number serves to enhance the velocity and species concentration but an opposite nature is seen in the case of Schmidt number.

Keywords: Free convection; thermal radiation; heat source/sink; porous plate and thermal diffusion.

1. INTRODUCTION

Magnetohydrodynamic free convective fluid flows with different geometries embedded in porous media have many engineering, industrial and geophysical applications. Some of them are utilized in geothermal reservoirs, drying process of porous solids, thermal filling, cooling of nuclear reactors, enhanced oil recovery, packed-bed catalytic reactors, and underground energy transport. A renewed interest has been carried out in studying magnetohydrodynamic (MHD) flow with heat and mass transfer simultaneously in porous media under to the effect of magnetic fields on the boundary layer flow control as well as on the presentation of many systems using electrically conducting fluids. This type of fluid flow under the influence of various physical parameters like thermal diffusion, heat source/sink chemical reaction and thermal radiation has attracted the interest of many researchers. As a result plenty of research articles have been employed. Makinde et al. [1] examined buoyancy effects on

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MHD Natural Convective Heat Generation/Absorbing and Radiating Fluid Past a Vertical Plate Embedded in Porous Medium – an Exact Solution

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Abstract

The present work reveals the examination of the characteristics of MHD free convective radiating fluid past a permeable plate with the occurrence of thermal transmission and heat source/sink along with changeable concentration and temperature. An exact solution has been employed by usual Laplace transform technique. The effects of diverse parameters on flow velocity, hotness and concentration are discussed through graphical representations and tables. With the incidence of heat source, the fluid velocity and temperature increases whereas the concentration decreases. The velocity and temperature falls down in the incidence of heat drop. Escalating values of Soret number serves to enhance the velocity and species concentration but an opposite nature is found with Schmidt number. The current study is well supported by the verification of previously published results.

Keywords: Free convection, Thermal radiation, Heat source/sink, Porous plate and Thermal diffusion.

1. Introduction

Magnetohydrodynamic free convective fluid flows with special geometries implanted in porous media have many engineering, industrial and geophysical applications. Some of them are utilized in geothermal reservoirs, drying process and thermal filling. A renewed interest was carried out in studying magnetohydrodynamic (MHD) flow with double diffusion in porous media under flow control as well as on the presentation of many systems using electrically conducting fluids. This type of fluid flows with thermal diffusion, heat source/sink, chemical reaction and thermal radiation has attracted the interest of many researchers. As a result plenty of research articles have been employed. Raju et al. (2011) analyzed MHD flow linking heated tending plates. Kim (2001) established unsteady magnetohydrodynamic convection flow of polar fluids through a vertical moving plate. A similar study was done by Seth et al. (2015). Hayat and Qasim (2010) as well as Vajravelu and Kumar (2004) employed systematic and statistical solutions of coupled nonlinear system arising in three-dimensional rotating flow. Murthy et al. (2011) analyzed this over non-darcy porous media. Soret effect on non-Newtonian liquid was studied by Narayana et al. (2013).

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STUDY OF RAMPED TEMPERATURE INFLUENCE ON MHD CONVECTIVE CHEMICALLY REACTIVE AND ABSORBING FLUID PAST AN EXPONENTIALLY ACCELERATED VERTICAL POROUS PLATE

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Abstract:

A systematic study has been performed on MHD convective chemically reactive and absorbing fluid along an exponentially accelerated vertical plate with the impact of Hall current by considering ramped temperature. Laplace transform technique is applied to obtain exact solutions of the non-dimensional governing equations for fluid velocity, temperature and concentration. Based on the above solutions, the expressions for skin friction coefficient, Nusselt number and Sherwood number are derived. The consequences of diverse physical parameters on flow quantities are examined thoroughly with graphical representations. The numerical values for skin friction coefficient, rate of heat transfer and rate of mass transfer are recorded and analyzed.

Keywords: MHD, free convection, Hall current, chemical reaction, radiation absorption, heat absorption, ramped temperature.

NOMENCLATURE

B_0	magnetic field strength
C_p	specific heat at constant pressure
Gr	thermal Grashof number
k	thermal conductivity of the fluid.
k^*	mean absorption coefficient
K	permeability of porous medium
m	Hall current parameter
M	magnetic parameter
Nr	radiation parameter
Sc	Schmidt number
Kr	chemical reaction parameter
Pr	Prandtl number
R	Radiation absorption parameter
Q_0	heat absorption parameter
q_r	radiative heat flux
t^*	time
t_0	critical time for rampedness
t_1	dimensionless critical time for rampedness.
T	fluid temperature
U_0	characteristic velocity
u	fluid velocity in x-direction
w	fluid velocity in z-direction

Greek symbols

β	coefficient of thermal expansion
η	non-dimensional space variable
σ^*	Stefan Boltzmann constant
σ	electrical conductivity
ρ	fluid density
ν	kinematic coefficient of viscosity
ω_e	cyclotron frequency
τ_e	electron collision time
ϕ	heat absorption parameter

Subscripts

w	condition at the wall
∞	free-stream condition/ Initial condition at the plate

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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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CONSUMER ATTITUDE AND BEHAVIOUR TOWARDS SOFT DRINKS WITH SPECIAL REFERENCE TO MAJOR MUNICIPAL CORPORATIONS, ANDHRA PRADESH

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ABSTRACT

Since consumers are the most important factor for business continuation, the understanding of consumer behavior is one of key elements in preparing marketing strategy. Consumer behavior is the study of what to buy, how to buy, where to buy, and when to buy in what quantity. Apart from the decision of to buy and not to buy, there is also a decision regarding which source to buy. Consumer behavior is also the study of factors that affect the behavior both internal and external such as, self-concept, social and cultural background, age, family, attitudes, personality and social class. In this study, an attempt is made to investigate the consumer preference on buying behaviour towards soft drinks. For this purpose, 300 sample respondents are selected from selected municipal corporations in Andhra Pradesh base on purposive sampling and collect data is analysed with the help of correlation and regression analysis. The results reveal that 54.56% of the observed variability in buying behaviour can be explained by the differences in both the independent variables namely product, price, place, promotion and remaining 45.5% of the variance in behaviour related to other variables.

Keywords: *Consumer Behavior, Consumer Preference, Place, Price, Product and Promotion.*

I. INTRODUCTION

Consumers make different types of decisions in everyday life. The decision consumer makes while purchasing is the focal point that marketers try to study. In this competitive business world, it has become important for every organizations to put great effort on researching consumer buying behaviour to find out detailed information on what consumers purchase, where, when and why they purchase, how and how much they purchase. The soft-drink industry comprises companies that manufacture nonalcoholic beverages and carbonated mineral waters or concentrates and syrups for the manufacture of carbonated beverages. Soft drink products have been well accepted by consumers and gradually overtaking hot drinks as the biggest beverage sector in the world. In the midst of the rapidly growing soft drink demand, the industry on the whole is encountering new opportunities and challenges

Consumer preferences

Consumer preferences is used primarily to mean to select an option that has the greatest anticipated value among a number of options by the consumer in order to satisfy his/her needs or desires. Preferences indicate choices among neutral or more valued options available. Consumer preferences are measured in terms of the level of satisfaction the consumer obtains from consuming various combinations or bundles of goods. The consumer's objective is to choose the bundle of goods which provides the greatest level of satisfaction as they the consumer define it. But consumers are very much constrained in their choices. These constraints are defined by the consumer's income, and the prices the consumer pays for the goods. Consumer value is measured in terms of the relative utilities between goods and these reflect the consumer's preferences.

Soft Drinks

The term "soft" is employed in opposition to "hard", i.e. drinks with high alcoholic content by volume. Generally, it is also implied that the drink does not contain milk or other dairy products. Hot chocolate, hot tea, coffee, tap water,

RESEARCH ARTICLE OPEN ACCESS

A Study on Call Data Records in Data Centres: Incoming Calls and Outgoing Calls

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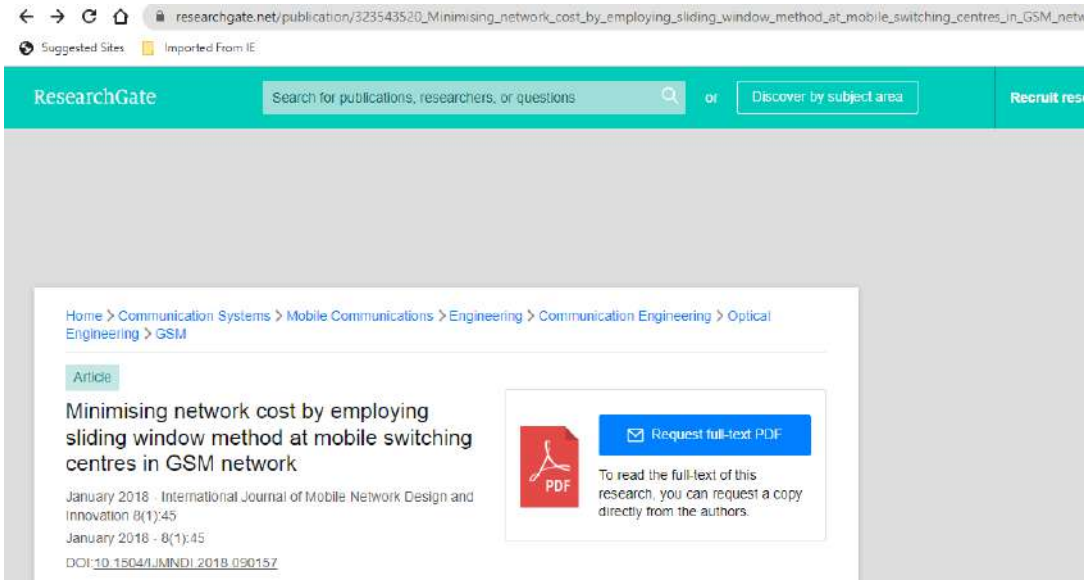
Abstract:

With the quick development of knowledge in Mobile Communication the difficult issue for providing services to their users. Frequent Pattern mining are often utilized in the sector of mobile communications for mining of cluster patterns from mobile user movement information, for client behaviour prediction, for predicting future location of a mobile user for location primarily based services and for mining patterns helpful for mobile commerce. improvisation data processing technology, some helpful information are often discovered from network traffic information and invasive behaviour and traditional behaviour are often established then the abnormal acts are going to be detected from the time period information. In mobile databases, to handle voluminous quantity of user's records and notice the amount of frequent patterns mixtures and hidden data. The information goes up exponentially and needs simulated machine time. The most important downside is that to access the user's record and to filter the foremost important frequent item sets and to accelerate the process and scale back error rate in classification result. With this regards it's attainable to maximize the out turn and minimize the service time for the user. To scale back the load on network traffic within the information data centres.

Keywords—Pattern Mining; Call Data Records; Network Traffic; Data Centres.

I. INTRODUCTION

Mobile Call Data Record (MCDR) is rich and mostly possesses its own complexity that needs massive analysis and certain level of intelligence in computation. The effect of genetic factors to databases is considered never ending story and always need further research. Among the most waited results would be the cause and effect of genetic factors to the users call data. Normally the study is conducted in different factors and currently, it is gaining a lot of attention by many researchers. Due to the importance of accessing and efficient method to process the users call data through experiment should be dome to develop good algorithms in processing the high dimensional data set in data centres. Due to the slow nature of the data collection where the mobile device is able to collect information without any interactions with the user the information could potentially provide us insights of user's day-to-day routines. The goal of this paper is to utilize the data collected from the mobile phone and survey answers gathered from the users to infer individual's levels of socialization, mental focus capacity and physical activity level and utilize effective data visualization to present the data. This paper aims to explore the relationships between different hints and inspection responses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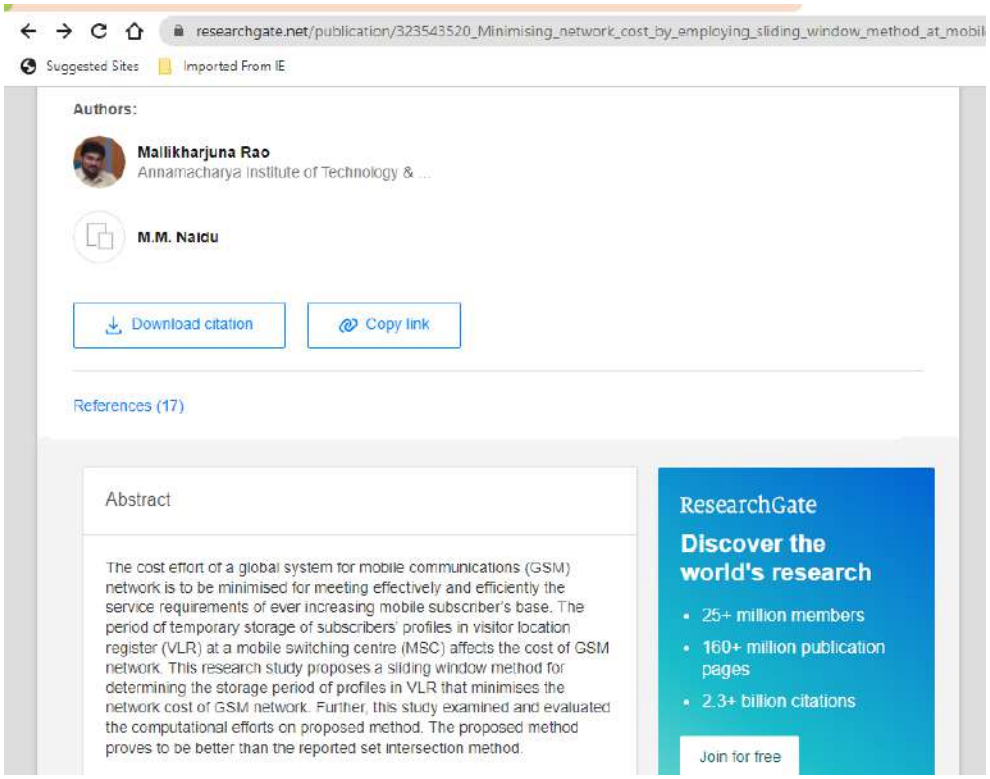
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References (17)
Abstract
The cost effort of a global system for mobile communications (GSM) network is to be minimised for meeting effectively and efficiently the service requirements of ever increasing mobile subscriber's base. The period of temporary storage of subscribers' profiles in visitor location register (VLR) at a mobile switching centre (MSC) affects the cost of GSM network. This research study proposes a sliding window method for determining the storage period of profiles in VLR that minimises the network cost of GSM network. Further, this study examined and evaluated the computational efforts on proposed method. The proposed method proves to be better than the reported set intersection method.
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