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A Study on Strength of Fibre Reinforced Concrete with Palm Oil Fuel Ash as Partial Replacement of Cement

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Abstract:
One of the main products required in manufacturing concrete is cement, with the increase in the amount of cement used, heat of hydration increases which will lead to the formation of cracks in concrete accompanied by shrinkage effect. To control this, palm oil fuel ash and agro waste which contains some amount of silica act as a pozzolonic material is being used as cement replacement and its strength is compared with conventional concrete of grade M25. Palm oil fuel ash which is obtained by burning palm fruit and dry leaves of palm oil tree in palm oil mills is also used to control heat of hydration effect on concrete, after pulverizing and making into a fine powder. In this study cement is being replaced with palm oil fuel ash in different percentages (5%, 10%, 15%,20%) to get an optimum point. From this optimum point the Steel fiber in different percentages (0%, 0.5%, 1%, 1.5% and 2%) and glass fiber in different percentages (0%, 0.1%, 0.2%, 0.3%, 0.4%). For each set of fibers, mechanical properties were studied by performing Compression test for Cubes, Flexural test for beams and Split Tensile test for cylinders and durability properties were studied by performing sulphate attack test cubes.

Keywords: Concrete, Palm Oil Fuel Ash, Steel Fibre, Glass fibre, compressive strength, flexural strength and split tensile strength

I. INTRODUCTION

Concrete is probably the most extensively used construction material in the world. Cement production is consuming significant amount of natural resources. That has brought pressures to reduce cement consumption using supplementary materials. Palm oil industry is one of the most important agro industries in India. Besides the production of crude palm oil, a large amount of solid waste is also an output from the palm oil industry. Annually, more than two million tons of solid waste of palm oil residue, such as palm fibre, shells, and empty fruit bunches are produced. Utilization of palm oil fuel ash (POFA) is minimal and unmanageable, while its quantity increases annually and most of the POFA are disposed of as waste in landfills causing environmental and other problems. One method to improve the brittle behaviour of the concrete is the addition of small fibers in concrete with randomly distributed. Such reinforced concrete is called Fibre Reinforced Concrete (FRC). There are different types of fibers that can be used in FRC they are Steel fibers, Glass fibers, Synthetic fibers, Carbon fibres, Nylon fibre. In this study the addition of steel and glass fibers are added to concrete, leads to improvement in cracking and tensile strength

II. MATERIALS AND PROPERTIES:

2.1 Cement:

Cement used in this experiment work is ordinary Portland cement of 53- grade available in the local market. The cement should be fresh and of uniform consistency. The specific gravity of the cement is 3.15. All properties of cement are tested by referring IS 12269 – 1987.

Table .1. Properties of cement

Sl. No.	Property	Value
1	Fineness test	1%
2	Setting time a)initial b)final	63min 321 min
3	Specific gravity	3.11

2.2 Fine Aggregates: Locally available sand conforming to grading zone II which is passing from 4.75 mm sieve and of specific gravity of 2.58 is used.

Table.2. Properties of fine aggregate

Sl. No.	Property	Value
1	Sieve analysis	Zone II
2	Specific gravity	2.58
3	Fineness Modulus	2.26

2.3 Coarse Aggregate: Locally available crushed stones conforming to graded aggregate of nominal size 20 mm as per IS: 383 – 1970. Specific gravity of course aggregate is 2.66.

Table.3. Properties of coarse aggregate

Sl. No.	Property	Value
1	Specific gravity	2.66
2	Fineness modulus	7.68

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AN EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF CEMENT WITH BAGASSE ASH IN CONCRETE MIX

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ABSTRACT:

Objectives: *There is an increase in demand and utilization of cement and many scientists are in search for developing alternative binding materials that can be eco-friendly and helps towards waste management. The use of agricultural and industrial waste produced can help in reduction of waste is in focus.* ***Methods:*** *In this work one of the agro waste named sugarcane bagasse ash (SCBA) has been used as partial replacement of cement. SCBA is produced by burning of sugarcane bagasse which is left after extraction of juice from sugarcane. At high temperature under controlled condition bagasse is burned to obtain ash which contains high amorphous silica. In this paper the cement by weight is replaced by 0%, 5%, 10%, 15%, 20% and 25% by SCBA in concrete.* ***Findings:*** *A comparison is made for 0% and other percentages by conducting different tests named compressive strength test, flexural strength test and split tensile strength test for 7 days and 28 days.* ***Improvements:*** *The test results shows that Sugarcane Bagasse Ash can be utilized for partial replacement of cement up to 15% by weight of cement without any major loss in strength.*

Key words: Agricultural Waste, SCBA, Concrete, Silica Content

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1. INTRODUCTION

Concrete is second most used material after water. Cement is the important constituent of concrete. During the production of cement, one of the greenhouse gasses namely carbon dioxide is emitted which is responsible for causing global warming[1]. Currently, some of the agro waste such as rice husk ash, sugarcane bagasse ash, etc has been used as an admixture. This one of the effective ways to reduce its impact on environment[2]. In the current study, an attempt has been made in order to use bagasse ash as partial replacement of cement. This waste usage can be economical and also have

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EFFECT OF CONCENTRATED ECCENTRIC LOAD IN LONGITUDINAL DIRECTION OF RECTANGULAR PLATES ON ELASTIC FOUNDATION

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ABSTRACT

Objectives: *To study the effect of Relative Rigidity of soil interaction behaviour on the rectangular plates.* ***Methods:*** *Analysis was done for a rectangular footing subjected to the eccentric concentrated load in the longitudinal direction up to the middle one third of its longer span dimension, the loss of contact phenomena was analyzed by the finite element method using ANSYS 12.0 software and the Critical Relative Rigidity (CRR) values i.e. the relative rigidity (RR) at which the soil medium just starts experiencing loss of contact with the footing were obtained for various L/B (1.2 to 2.0) ratios up to the two way distribution.* ***Findings:*** *With the increase in the eccentricity of concentrated load the CRR values were decreased and as the L/B ratio increases, the CRR values increased.* ***Improvements:*** *Effect of Relative Rigidity of soil interaction behaviour concept can be extended to different types of plates like square, circular, and loss of contact phenomena should be analysed.*

Key words: Relative Rigidity, Critical Relative Rigidity, Rectangular Footing, soil structure interaction, loss of contact.

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1. INTRODUCTION

The design of foundations is to be conferred more consideration as there is a great deal of advancement done in the design of the super-structure. The General design of footing considers that the footing will be in full contact with soil, but does not happen when a slight footing is lying on a hard stratum. Loss of contact emerges when the footing is having lesser rigidity than the soil rigidity. So if the soil interaction studies are considered, it will prompt lessening of the safety factor. The analysis has done on the effect of the lift-off on the response of circular plate for different loads[1,2], a

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STUDY OF SUITABLE FOUNDATION IN SEISMIC ZONE III CONSIDERING SSI

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ABSTRACT:

Objective: *The objective of the paper is the study of maximum shear forces and bending moments of soil interaction of different types of foundations.* ***Method:*** *An attempt has been made to study the effect of soil structure interaction of a multi-stored SMRF building with isolated foundation and strip foundation systems resting on clay soil. The building was analyzed by equivalent static method using STAAD Pro software for building with rigid base. ANSYS 12.0 is used for analyzing the building for effect of soil interaction for isolated foundation and strip foundation.* ***Findings:*** *According to IS1893-2002 when a structure is resting on earthquakeprone region, the soil structure interaction must be considered in analysis. Foundation is a part of structure in which transfers the loads of building of the soil. It is found that by considering the soil structure interaction the shear force and bending moments of strip foundation are very less than isolated foundation.*

Key words: Seismic analysis, soil structure interaction, foundations, STAAD Pro, ANSYS 12.0.

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1. INTRODUCTION

Designing and modelling of any structure a crosses two engineering disciplines, the structural engineer who analysis and designs the structure and the geotechnical engineer who deals with the geotechnical aspects of the soil. The strength and the foundation of the structure are the two aspects must be studied while designing the structure in earthquake zone. Foundation is the part of the structure which transmits all the loads to the soil. The soil structure interaction study is used to access the behavior of structure and soil as one. Analysis of the structure helps the designer to study the behavior of structures probably the shear force and bending moments of the foundation. **M.V Gaikwad (2015)**

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EFFECT OF CHANGE OF STOREY DRIFT AND STOREY HEIGHT IN MULTI STOREY BUILDING WITH VARYING SEISMIC ZONES

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ABSTRACT

Objective: *In the present work G+10 storied RCC building is consider for analysis purpose.* ***Method analysis:*** *The main purpose of this work is to analyze the seismic behavior of RCC structures in different seismic zones i.e. (II, III, IV and V). In the each zone different floor heights are considered (10 buildings for each zone). The total analysis is carried out in the STAAD. Pro software for Gravity and lateral loads (seismic).* ***Findings:*** *By analyzing all these buildings the data base is prepared for worst load combination. The results are compared with corresponding zones and structural elements are designed for worst load combinations as per the Indian standards. The present study is to investigate the behavior of multi storied RCC plane frames considering storey drift and foundation pressure.* ***Applications:*** *The study is to investigate the behavior of multi storied RCC plane frames considering storey drift ands foundation pressure, seismic zones, STAAD. Pro, gravity load, lateral load (seismic), RCC building, different building height.*

Key words: Seismic Zones. STAAD. Pro, Gravity, Seismic and Lateral Loads, RCC Building.

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AN EXPERIMENTAL STUDY ON METAKAOLIN AND GGBS BASED GEOPOLYMER CONCRETE

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ABSTRACT

Objectives: *To study the strength and durability properties of Metakaolin and Ground Granulated Blast Furnace Slag (GGBS) based Geopolymer Concrete mixes at various proportions.* ***Methods/Statistical Analysis:*** *In this connection, Geopolymer is showing great potential and does not need the presence of Portland cement as a binder. Geopolymer concrete is prepared by using an alkaline solution of the suitable chemical composition.* ***Findings:*** *The ratio of the mixture is 2.5 and the concentration of sodium hydroxide is 10M. The geopolymer concrete specimens are cast and tested for different types of strengths for 3, 7, and 28 days and cured at ambient temperature.* ***Applications/ Improvements:*** *This study helps in gaining knowledge about the morphological composition of concrete which might result in path-breaking trends in the construction industry.*

Key words: Geo-polymer, Metakaolin, Ground Granulated Blast Furnace Slag, Alkali Activator.

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1. INTRODUCTION

Geopolymer Concrete (GPC) is an efficient binder in the manufacturing of concrete technology. The source materials such as Metakaolin are treated with alkaline liquid to obtain the binder/adhesive agent. Geopolymer concrete will be introduced as an alternative concrete which did not use any cement in its mixture and used Metakaolin and GGBS as alternative cement. NaOH and Na2SiO3 were used as activator solution. Geopolymer cement is a state of art novelty and tends to create a platform for substitution with conventional manufacturing materials for architectural and construction industry.

The concrete technology should tune on the lines of sustainability where the materials utilized in construction sector should be eco-friendly as well as facilitate the process of reuse if necessary. The integrated ecological based waste utilization finds its application ranging from small scale industries

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INFLUENCE OF OPTIMAL COLUMN SPACING FOR G+11 STOREY RC MOMENT RESISTING FRAME

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ABSTRACT

***Objective**: To analyze a safe G+11 commercial by obtain the ideal space parameters of varied columns. **Method of analysis:** The following work is limited to plot frames of 50m X 50m (with aspect ratio of panel sizes varying from 1 to 4) for the first case and for second case the size of the panel are 50m x 50m, 50m x 30m, 50m x 25m and 50m x 20m (with an aspect ratio of 1, 0.6, 0.5, and 0.4 respectively). The structure is modeled, analyzed for gravity and lateral (seismic) loads then designed as per IS: 456-2000 and analyzed in STAAD. Pro. Failed members are again modulated until all the members are safe. By observations and calculations, the most economical panel size is suggested and its spacing is noted. **Findings:** According to aspect ratio which panel shows more story drift and which is having more self-weighted respectively which leads to economical column spacing design further. **Applications:** The database is prepared for worst load combination and the structural elements are designs for the worst load.*

Key words: Column Spacing, Commercial Building, STAAD. Pro, Panel Size, Aspect Ratio and Lateral Loads.

Cite this Article: G Sri Lakshmi and J D Chaitanya Kumar, Influence of Optimal Column Spacing For G+11 Storey RC Moment Resisting Frame. *International Journal of Civil Engineering and Technology*, 8(1), 2017, pp. 390–396.
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1. INTRODUCTION

With increasing population people has focused on space efficient living with use of largest space parameters. Nowadays the trend off multistory structures is increasing day by day which are motivating builders and designers to go for space utilization structures. This urbanization has led to the concept of more space with less structural elements which tend to poor plinth area. As they occupy more space in the structure. By keeping all these factors under consideration a small attempt has made to eliminate columns and influence of this reduction technically in a multi-storey structure.

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Metric for Measuring the Pheromone in ANT System

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ABSTRACT

On a mobile ad-hoc network environment, the knowledge about the network's link state is essential to optimize the routing procedures since the resources are scarce. This paper presents a study about different Measuring pheromone value and how they react to possible changes in traffic rate used in ACO. Observing how the pheromone value on a link changes, it could be possible to identify certain patterns which can indicate the path status. We empirically developed a framework metric which measure the pheromone value of ACO routing in a network of varying topology structures. In our study, we use ACO routing of which pheromone value is gained. The pheromone values are measured with the metric. A version of ACO based routing protocol called AntNet has been implemented to work within the network simulator ns-2. Routing tables and Pheromone tables have been computed for each node in the network. On the basis of these tables we have tried to compute the shortest and most optimal path between source node and destination node.

Keywords: Mobile Adhoc Networks, ACO, Pheromone, Antnet

1 .Introduction

Pheromone based decision making has been a dynamic factor in indirect communication among based on ACO , In ACO ants in food foraging by sensing pheromone trail laid by previous ant is stated as "stigmergy"[1]. This is done by ants exploring multiple paths to reach the food source. In this regard Ant System(AS) algorithm, originally proposed by Dorigo et al[2] was the first search algorithm, which modulate the ants behavior in food search procedure [3][4] This is done in a stochastic manner, which helps the routing algorithms to be adaptive and handle load. In Multiple Data Paths, to handle resources in network efficiently, an ant carries pheromone table, which is constructed when it traverses from a given source to the destination. To select the best path, it calculates pheromone values in probabilistic manner and takes decision emergently. A pheromone table can have multiple paths to the destination. Whenever there is failure on the optimal path decided by the ant, it checks for next best entry in the pheromone table and follows the path. The typical swarm intelligence system has the following properties:

It is composed of many individuals called "Agents". These agents exploit only local information in the form of "Pheromone" found in the environment and interacts each other indirectly. The overall behavior of the system results from the interactions of individuals with each other and with their environment, that is, the group behavior self-organizes.

Properties of the pheromone:

The pheromone is olfactive and volatile.

The pheromone is stronger if more ants go along the same path (reinforced by number).

The pheromone is stronger if the path from the nest to the food is shorter (less evaporation).

Representation of pheromone

For solving the routing problems, the pheromone is represented in a matrx [τ_{ij}].

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Detection of Malicious Nodes and Packet Drop in WSN using Mpas Routing

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ABSTRACT

Wireless sensor Networks is adhoc wireless network with a group of sensor nodes randomly distributed in monitoring area.Thesenetworks face certain network problems such as limited node resources, short network life cycles.To solve these problemsit is important to design a trust based Secure Ant Routing algorithm based on Pheromone where Pheromone is formulated based on node-reputation, residual node-energy and transmission delay. Simulation results show that the algorithm can increase the security of data transmission, balance of energy consumption among nodes and quality of routing service.

Keywords: Wireless sensor networks, trust based secure Ant, ant colony optimization, MPAS

1 .Introduction

A wireless sensor network (WSN) is a network formed by a large number of sensor nodes where each node is equipped with a sensor to detect physical phenomena such as light, heat, pressure, etc. WSNs are regarded as a revolutionary information gathering method to build the information and communication system which will greatly improve the reliability and efficiency of infrastructure systems.Wireless sensor networks have recently been widelyused in environmental monitoring, medical treatment, and military applications, among others [1,2].However, because of the unique working environment of wireless sensor networks, they are vulnerableto many security threats, such as Sybil, wormhole and selective forwarding attacks [3]; therefore, thesecurity and credibility of any routing algorithm for wireless sensor networks need to be studiedthoroughly. Many researchers have proposed a number of typical routing algorithms for wirelesssensor networks, but most of these routing algorithms only consider the limited resources of thewireless sensor network as the primary problem, their design goals are the best route discovery,This paper proposes an improved ant-colony optimization algorithm for wireless sensor networks. An ant-colony optimization algorithm is a meta-heuristic algorithm which is suitable for the selection of node paths and has good potential for application in wireless sensor networks. In the improved ant-colony optimization algorithm, the node reputation value, the residual node energy, and the transmission delay are combined to formulate a multi attribute pheromone, and full consideration is given to the security of data transmission while balancing this concern with the energy consumption of the network nodes to avoid the premature death of some nodes.

2 Related Concepts:

Continuous development of science and technology during recent years human beings are paying a great attention to security issues. Security can be classified into two main aspects:trust and Privacy protection . Although scholars have studied security in various fields, a truly high degree of security has not yet been achieved [4,5,6,7]. Currently, many scholars are attempting to solve the problem of limited node energy in wireless sensor network routing algorithms, they rarely consider the security issues posed by malicious nodes, and much less consider safety and energy issues simultaneously. Therefore, in this paper, to improve the energy efficiency of wireless sensor networks, a suitable trust mechanism is introduced into the routing

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Optimal Priority based Earliest Deadline Scheduling in Cloud Computing

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ABSTRACT: *Cloud computing provides flexible computing services to access resources of variable capabilities and sizes. Scheduling is an important activity in cloud computing to improve resource utilization. In this paper we presented Optimal Priority based Earliest Deadline First (OEDF) Scheduling model for resource allocation based on priorities, deadlines and processing times while allocating resources to the required jobs. In order to evaluate the performance the metrics areAverage_Deadline_Violation, Average_Turnaround_Time and Average_Waiting_Tine which are compared against conventional methods and observed that the optimal values are obtained for the proposed method Optimal Priority based Earliest Deadline First (OEDF).*

KEYWORDS: ***Cloud Computing, Scheduling, Priority, Virtual Machine, Resource Allocation***

I. INTRODUCTION

Cloud Computing is a ubiquitous network through which the user can get the resources as and when needed from the shared pool, where the pool may contain 'n' number of services such as storage, VM, network, software, applications operating systems etc. The cloud is mainly designed to provide distinct resources of IT industry and the user will be charged based on the usage of the service rather than on a flat rate and the cloud computing follows measuring techniques of the usage by the user in order to charge the service.

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PRIORITY BASED EARLIEST DEADLINE SCHEDULING IN CLOUD COMPUTING

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ABSTRACT:

Cloud Computing is a new phenomenon in Information Technology where computing is delivered as service rather than product, through shared resources, software and information to consumers as an utility over networks. In cloud computing scheduling is an important activity to improve resource utilization. In this paper we presented Priority based Earliest Deadline First (EDF) Scheduling model for resource allocation based on priorities, deadlines and processing times while allocating resources to the required jobs. The performance metrics Average Turnaround Time, Average Waiting Time and Average Deadline Violation are reduced reasonably when compare to traditional scheduling models like FCFS and SJF Scheduling Models.

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Detection of Malicious Nodes and Packet Drop in WSN using Mpas Routing

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ABSTRACT

Wireless sensor Networks is adhoc wireless network with a group of sensor nodes randomly distributed in monitoring area.Thesenetworks face certain network problems such as limited node resources, short network life cycles.To solve these problemsit is important to design a trust based Secure Ant Routing algorithm based on Pheromone where Pheromone is formulated based on node-reputation, residual node-energy and transmission delay. Simulation results show that the algorithm can increase the security of data transmission, balance of energy consumption among nodes and quality of routing service.

Keywords: Wireless sensor networks, trust based secure Ant, ant colony optimization, MPAS

1 .Introduction

A wireless sensor network (WSN) is a network formed by a large number of sensor nodes where each node is equipped with a sensor to detect physical phenomena such as light, heat, pressure, etc. WSNs are regarded as a revolutionary information gathering method to build the information and communication system which will greatly improve the reliability and efficiency of infrastructure systems.Wireless sensor networks have recently been widelyused in environmental monitoring, medical treatment, and military applications, among others [1,2].However, because of the unique working environment of wireless sensor networks, they are vulnerableto many security threats, such as Sybil, wormhole and selective forwarding attacks [3]; therefore, thesecurity and credibility of any routing algorithm for wireless sensor networks need to be studiedthoroughly. Many researchers have proposed a number of typical routing algorithms for wirelesssensor networks, but most of these routing algorithms only consider the limited resources of thewireless sensor network as the primary problem, their design goals are the best route discovery,This paper proposes an improved ant-colony optimization algorithm for wireless sensor networks. An ant-colony optimization algorithm is a meta-heuristic algorithm which is suitable for the selection of node paths and has good potential for application in wireless sensor networks. In the improved ant-colony optimization algorithm, the node reputation value, the residual node energy, and the transmission delay are combined to formulate a multi attribute pheromone, and full consideration is given to the security of data transmission while balancing this concern with the energy consumption of the network nodes to avoid the premature death of some nodes.

2 Related Concepts:

Continuous development of science and technology during recent years human beings are paying a great attention to security issues. Security can be classified into two main aspects:trust and Privacy protection . Although scholars have studied security in various fields, a truly high degree of security has not yet been achieved [4,5,6,7]. Currently, many scholars are attempting to solve the problem of limited node energy in wireless sensor network routing algorithms, they rarely consider the security issues posed by malicious nodes, and much less consider safety and energy issues simultaneously. Therefore, in this paper, to improve the energy efficiency of wireless sensor networks, a suitable trust mechanism is introduced into the routing

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De-Blurring of pyramid fused image on Visible and Infrared Images at Pixel and Feature Levels Using Blind De-Convolution and Wiener Filter

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ABSTRACT

In the current technological advanced world multi-scale Image Fusion place a vital role in the digital image processing. In multi scale resolution techniques Laplacian Pyramid is a well known technique in which all low level resolution images are fused to produce a high resolution image. But the resultant image is having one disadvantage that it is somewhat blurred image when compared to the original image. This paper focuses on removing the unwanted blurrness from the resultant image by using Blind De-convolution and Wiener Filters. Both methods are applied separately on pyramid fused image for visible images, infrared images and combination of visible and infrared images at Pixel and Feature levels using principle component analysis and simple average methods. Both De-convolution and Wiener Filter Technique results are compared. The comparison results showed better PSNR (Peak Signal to Noise Ratio) values for Wiener Filtered blurred image than the Blind De-convolution method.

Keywords: Feature Level, Multi -Scale Resolution, Pyramid, Pixel Level, PCA, Wiener filter.

I. INTRODUCTION

The idea behind the image fusion is merging complementary and redundant information from multiple images in such a way, so as to retain the most desirable characteristics of every image. The single fused image is relatively high informative when compared to the original images [1]. Analysing the image data for getting information from the real time images is a crucial task in present days. To analyze the image data one can interact with the images having various resolutions. Generally images exhibit features in different scales. High resolution images have larger gray values. Larger gray value images represent bright images; because of this multi scale image fusion finds applications in different fields such as military, area surveillance and forensic science.

Military: Giving directions and guidance to missiles by using Multi scale image fusion improves accuracy of locations which leads success in the mission taken up by the military of any nation [2].

Area surveillance: For protecting borders of nations, border areas are under continuous surveillance at different weather conditions. Not only at the borders but also at ship yards and even at security of buildings multi scale image fusion has capability of providing quality scenes [3].

Clickthrough Mechanism For Keyword Search In Mobiles

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Abstract: **Within our design, the customer collects and stores in your area the click through data to safeguard privacy, whereas heavy tasks for example concept extraction, training, and reranking are carried out in the PMSE server. Because of the need for location information in mobile search, PMSE classifies these concepts into content concepts and placement concepts. Additionally, users' locations are utilized to supplement the place concepts in PMSE. We advise a customized mobile internet search engine that captures the users' preferences by means of concepts by mining their click on data. The consumer preferences are organized within an ontology-based, multifaceted account, which are utilized to adapt a customized ranking function for rank adaptation of future search engine results. In line with the client-server model, we present an in depth architecture and style for implementation of PMSE. To characterize the variety from the concepts connected having a query as well as their relevance's towards the user's need; four entropies are brought to balance the weights between your content and placement facets. Experimental results reveal that PMSE considerably increases the precision evaluating towards the baseline. Furthermore, we address the privacy issue by restricting the data within the account uncovered towards the PMSE server with two privacy parameters. We prototype PMSE around the Android Os platform.**

Keywords: **Click Through Data; Concept; Location Search; Mobile Search Engine; Ontology; Personalization; And User Profiling;**

I. INTRODUCTION

To be able to return highly relevant leads to you, mobile search engines like Google must have the ability to profile the users' interests and personalize looking results based on the users' profiles. Observing the requirement for various kinds of concepts, we contained in this paper a customized mobile internet search engine (PMSE) addressing various kinds of concepts in various ontologism. Particularly, recognizing the significance of location information in mobile search, we separate concepts into location concepts and content concepts. PMSE will favor results which are worried about hotel information in Japan for future queries on "hotel." To include context information revealed by user mobility, we take into consideration the visited physical locations of users within the PMSE [1]. Because this information could be easily acquired by Gps navigation devices, it's hence known as Gps navigation locations. Gps navigation locations play a huge role in mobile web search. Within this paper, we advise a practical the perception of PMSE by following a met search approach which relies on among the commercial search engines like Google, for example Google, Yahoo, or Bing, to do a real search. The customer accounts for finding the user's demands, submitting the demands towards the PMSE server, displaying the came back results, and collecting his/her clickthroughs to be able to derive his/her requirements. The PMSE server, however, accounts for handling heavy tasks for example forwarding the demands to some commercial internet search engine, in addition to training and reranking of search engine results prior to being come back towards the client. The suggested personalized mobile internet search engine is definitely an innovative method for personalizing web search engine results. By mining content and placement concepts for user profiling, it utilizes both content and placement preferences to personalize search engine results for any user. Privacy upkeep is really a challenging issue in PMSE, where users send their user profiles together with queries towards the PMSE server to acquire personalized search engine results. PMSE addresses the privacy issue by permitting users to manage their privacy levels with two privacy parameters, minDistance and expRatio. The suggested personalized mobile internet search engine is definitely an innovative method for personalizing web search engine results.

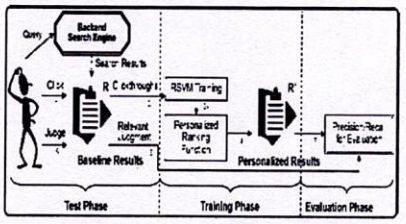

Fig.1.Overview of the system

II. METHODOLOGY

First, computation-intensive tasks, for example RSVM training, ought to be handled through the PMSE server because of the limited computational

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Round Robin based Prioritized Earliest Deadline First Scheduling in Cloud Computing

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[1] Research Scholar, Dept of CSE, AdikaviNannaya University ,[2] Dept of CSE, AdikaviNannaya University, [3] Department of CS,B.V.Raju College, [4] Department of CSE, VITW

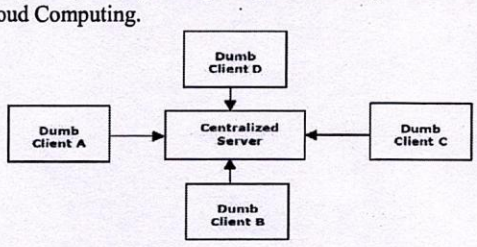
Abstract - **"Cloud computing is a ultimate model for processing the user requests in a convient way by providing on-demand network accessing to a available shared computing resources like , networks ,servers , storage, high end applications ,and many other services etc which can be fastly provided and acquired back with minimal management effort or with service provider interaction ".Thus Cloud Computing is a new phenome`non in Information Technology where computing is delivered as service rather than product, through shared resources, software and information to consumers as an utility over networks. In cloud computing scheduling is an important activity to improve resource utilization. In this paper we presented Round Robin based Prioritized Earliest Deadline First (EDF) Scheduling model for resource allocation based on Time Quantum, priorities, deadlines and processing times while allocating resources to the required jobs. The performance metrics Average Turnaround Time, Average Waiting Time and Average Deadline Violation are reduced reasonably, when compare to traditional scheduling models like FCFS and SJF Scheduling Models.**

Keywords - Hidden Web Crawler, Query Optimization, Search engines, Metadata, document frequency, term weights, Time Quantum, Optimization, Efficient Round Robin EDF.

INTRODUCTION

In a general way the computation or computing main purpose is to solve a problem so it is goal-oriented activity for requiring, benefiting from, or for creating computers. Thus, computing includes developing and building hardware and software systems for a wide range of problems or purposes. They are processing a problem, structuring a model, and managing various kinds of information or data the example activities by using the computations are doing scientific studies using computers, making computer systems to act or behave as intelligent robots, creation of entertainment and for communications and media etc. This list goes on endlessly, and the possibilities are also very vast".

In Computing we have seen centralized computing, Distributed computing, Grid computing, Cluster Computing, Utility Computing and Finally now seeing Cloud Computing.



Centralized Network Computing Model

Centralized computing: Example mainframe computer where every resource is placed in a single centralized system if that system goes down everything goes down

Distributed computing: there are several autonomous computational bodies, each of which has its own local memory and the workstations communicate with each other by the concept of message passing examples for Distributed computations are Internet. Workgroups etc.

Grid Computing: Grid computing is a making a super computer infrastructure by including the infrastructure across the network to work on particular problem with less expensive power

Cluster Computing: Making a single unit, which is locally deployed to improve speed, reliability, and accuracy compared to a single computer with the same thing much cost effective.

Utility Computing: The practical implementation of cloud can be seen in utility computing .In this modelthe service provider makes resources and infrastructure available to the customer as and then needed, and charges him for usage of the resource rather than a common or fixed rate, which generally called flat rate.

Cloud Computing is a merging amalgam in which all the resources are permanently stored on the server and are utilized by the clients through internet [Barrie Sosinsky, 2011]. Internet is set of public and private networks, which are interconnected, with a large pool of devices. A cloud provides dynamic services to the end user's by

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This Paper can be downloaded from the following IJSRCSEIT website link
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IJSRCSEIT Team wishes all the best for bright future

Editor in Chief
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CERTIFICATE OF APPRECIATION

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have submitted a paper title – **PERFORMANCE ANALYSIS OF SYMMETRIC AND ASYMMETRIC KEY CRYPTOGRAPHY ALGORITHMS**

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In recognition of the publication of the paper entitled

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Fault Tolerance Review in Wireless Sensor Networks

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Abstract: ***Wireless sensor networks have diversified application like environmental monitoring, scientific data collection, and battlefield surveillance. In the Wireless sensor network, the sensor nodes are deployed in all possible environments. The wireless sensor network infrastructure comprises of a network and sensor nodes. Reliability is the prime issue in wireless sensor network. Reliability is affected by errors and faults that occurs due to various hardware and software issues. In both the wireless sensor networks and the traditional wireless networks occurrence of fault is persistent. If any node fails due to any abnormal condition then there will be a barrier in the communication. The failure of the communication in the wireless sensor networks may be caused by erroneous of nodes, breakdown in the links. The concept of fault tolerance enables the wireless sensor network to find and even out the errors. The self-healing capability in the wireless sensor network makes the nodes in the network more reliable.***
Keywords: Fault Tolerance, Reliability, Sensor Nodes, Wireless Sensor Networks.

I. INTRODUCTION

A Wireless sensor network comprises of sensor nodes, which are having the capability to sense, process and communicate data [1]. The applications such as military, industrial process are mainly involved in the enhancement of wireless sensor network. The wireless sensor nodes are of low cost so that large scale deployment of the sensor nodes is possible. Availability, Reliability, Maintainability are some of the promising characteristics offered by the Wireless sensor networks [2]. As the sensor nodes increases in the application the fault tolerance can only make the system work efficiently.

The sensor nodes are not affected by the faults and failures in the service level of the wireless sensor networks. The wireless sensor networks aim at eliminating the MTTR by employing the detection and recovery methodology [3]. Node to node communication is possible with the deployment made by the sensor nodes in the wireless sensor networks. The communication service employed by one node with the other node is based on multi hop routing.

Each and every node employs a dedicated task. The sensor nodes, which are having desired hardware capabilities are capable of performing the task for other nodes which are not having desired hardware functionalities [4].

The sensor nodes with efficient hardware functionalities may also fail and fault may occur due to radio interference, battery exhaustion. The hardware and software faults may lead to the above mentioned problems and make the system fault [5]. If any failure occurs in the sensor node, then the sensor node may not be in a condition to process any data. Sometimes a minor software bug may also drive the system to massive failure [6].

II. FAILURES IN WIRELESS SENSOR NETWORKS

Before coping with fault tolerance mechanisms, one must be able to understand the difference between faults, errors, failures.

Fault is a type of defect which drives to error. An Error is an undefined state which drives to failure. Failure is a state where the system cannot implement its functionality [7]. The fault, error, failure is explained briefly with the help of the figure. In the Figure 1 there are two nodes they are node A and node B connected to a sensor.

Node A's task is to sense the data and transmit the measured data to the Node B which has an aggregation service running on it. Due to some disturbance caused between Node A and sensor.

The Node B may not receive any data because Node A is in Failure state.

The fault state occurred between the Node A and the Node B. The error state occurred when the sensor is not capable of pushing the data to the Node A. The Fault detection and Fault recovery are the two significant operations done to overcome in Faulty situations [8]. example of a web page in [7].

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Modified Gating Techniques for Power and Speed Optimization in Arithmetic Circuits

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Abstract: As the threshold voltage is reduced due to voltage scaling in CMOS technology, it leads to increase in sub-threshold leakage current and hence static power dissipation. In this paper a power reduction technique named high speed drain gating is proposed to yield high speed, low power consumption and fast discharge. In these techniques two sleep transistors are employed, one to conserve leakage power and the other to reduce propagation delay. Simulations are performed using Tanner EDA tool in 90nm process technology. Comparative analysis of the present techniques is tabulated using 4x2 encoder and NAND gate.

Key Words: *leakage power, sleep mode, active mode, drain gating, power gating,Encoder.*

*****

I INTRODUCTION

As we move on to finer MOSFET technologies, transistor delay has decreased remarkably which helped in achieving higher performance in CMOS VLSI processors. With technology scaling, it is required to reduce the threshold and power supply voltages. As square of power supply voltage is directly proportional to dynamic power dissipation, to achieve less consumption of power, supply voltage has to be reduced. Static power and dynamic power are two main components of total power dissipation. Static power dissipation occurs due to continuously ON /OFF transistors when there is no change in input pattern. The components of static power dissipation are sub threshold leakage current, junction leakage current, gate oxide leakage current, gate induced drain leakage, pinch through leakage. Substantial increase has been observed in sub threshold leakage current with scaling of threshold voltage [1].

To counter the unwanted leakage in CMOS circuit, many techniques have been proposed over the years. Power gating [2] and stacking effect [3] are two well known techniques for reducing leakage power dissipation. Power gating normally makes use of sleep transistors that are connected either between the power supply and the pull-up network (PUN) or between the pull-down network (PDN) and ground. Sleep transistors are switched on when the circuit is evaluating and they are switched off in standby mode to conserve the leakage power in the logic circuit.Multi-threshold-CMOS (MTCMOS) [4] technique is also an effective way to achieve considerable decline in leakage power consumption. In MTCMOS technique, high *V*th sleep transistors are added in the circuit whereas PUN and PDN use low *V*th devices. In dual threshold circuits [5], low *V*th devices are used in the delay critical sections and high *V*th devices are used to reduce the leakage current in the circuitry. Stacking of transistor in series reduces the sub threshold leakage current when one transistor is in the off state. Stacking effect is used in sleepy stack technique [6] and force stack technique [7]. Sleepy stack technique provides better results than forced stack technique. In forced stack, an extra sleep an additional sleep transistor is connected in parallel with the transistor stack. This reduces the leakage current but at the same time delay in the circuit is increased. LECTOR and GALEOR are also two leakage tolerant techniques. LECTOR makes use of two leakage control transistors (LCTs) that are connected between the PUN and PDN. In the same time GALEOR technique makes use of gated leakage transistors (GLTs). Both LCTs and GLTs reduce leakage by increasing the resistance between supply voltage and ground.

Another efficient technique to overcome the leakage current problem is drain gating, and its variation and the modified circuits are proposed in detail in Section 2. The modified drain gating or the High Speed Drain Gating circuits are proposed in section 3. Simulation results taking NAND gate, 4x2decoder are enumerated in Section 4 and Section 5 provides the final conclusion.

II DRAIN GATING TECHNIQUES

In drain gating techniques, extra transistors are added in the between VDD and ground in four different configurations. Depending upon the position of the extra transistors these techniques are classified into four different methods. 1. Drain gating 2. Power gating 3. Drain-header and power-footer gating (DHPF) 4. Drain-footer and power-header gating (DFPH). The circuit topologies are shown in below figure. These techniques operate in two modes, active

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A CMOS dynamic logic circuit using FCR

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Abstract: Due to the superior speed and area characteristics, dynamic circuits are widely applied in data paths and other time critical components in modern microprocessors. The high switching activity of dynamic circuits, however, consumes significant power. In this project, a p-type/n-type dynamic circuit selection (PNS) algorithm and a flexible charge recycling (FCR) design methodology are proposed to achieve high power efficiency in data paths. The effects of technology scaling, data path width, design complexity, clock skew and environmental conditions are discussed. Simulation results shows that the power consumption of an arithmetic and logic unit (ALU) with the proposed PNS-FCRcan be reduced by up to 60% as compared with a conventional ALU.

I. Introduction

Over the past four decades, the number of transistors in a chip has grown continuously. With an increasing transistor density, the power consumption of
microprocessors has become a major design issue for a wide range of applications, from ultralow power medical sensors to high performance microprocessors in leading servers. As a fundamental part of modern microprocessors, data paths perform computing operations, typically along the critical path. The operating speed of the data paths usually determines the achievable operating frequency of the entire microprocessor. At the same time, the data path is one of the most active components and consumes a significant share of the total power consumption. This situation is further exacerbated for those applications with an intensive computation, such as digital signal microprocessors and multimedia processors with multiple cores. Hence, it is vital to achieve low power data paths in modern
microprocessors.

Due to the superior speed and area characteristics, dynamic circuits are widely applied in data paths and other time critical paths. For example, in the 32-nm Intel Itanium microprocessor, code named Poulson, and the 32-nm AMD microprocessor, code named Bulldozer, the on-chip memory and arithmetic and logic unit (ALU) adopt n-type dynamic circuits to minimize latency. However, since the dynamic circuits are usually cascaded to form domino CMOS logic, each stage of dynamic logic requires a static CMOS inverter to ensure that all inputs to each stage are maintained low during the precharge phase. This property makes synthesizing dynamic circuits with Computer Aided Design (CAD) tools more difficult than synthesizing static CMOS circuits. In addition, the varying characteristics of different types of dynamic circuits (n-type and p-type) increase the design complexity of a data path. Unfortunately, the existing solutions are not sufficient to solve these issues. In this paper, a novel p-type/n-type dynamic circuit
selection (PNS) algorithm and a flexible charge recycling (FCR) design methodology are proposed, referred to here as PNS-FCR, which targets low power data paths in modern microprocessors.
The primary contributions of this paper are as follows.
1)A novel PNS algorithm is presented to provide charge recycling and explore power saving opportunities for specific applications.
2) A design flow to achieve power efficient data paths is presented.
3) An analysis of power efficiency of the PNS-FCR is provided and an analytical model is described for estimating the power savings of PNS-FCR.
4) A comprehensive suite of simulations is discussed, evaluating the effects of technology scaling, data path width, design complexity, clock skew, and environmental conditions. These simulations demonstrate that PNS-FCR provides low design complexity, good design flexibility, and significant power savings, while achieving the targeted performance objectives of different applications.
5) An ALU IC is described based on a 0.35-μm Global Foundries technology, demonstrating the power and area efficiency of PNS-FCR.

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Implementation of an Efficient Smart Home System using MQTT

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Abstract - *This paper aims to provide a smart system which scales down the workload of working staff, contributing additional services, integration with the home environment by employing a community broker. The home environment consists of a smart home controller, sensors, devices that transfer information for the purpose of enhancing security. The community end consists of a central server, element like a personal computer which has the ability of associating with the devices that are in remote locations. The interface devices are employed so as to avoid the confusion between the functionality and user interface. The paper aims on both MQTT as well as HTTP services. The MQTT desires to implement services in smart home systems. The HTTP governs the transferring of location based data.*

***Key Words*: Community broker, MQTT, HTTP, cloud services, Smart Systems.**

1. INTRODUCTION

Day by day so many technologies are developing. In that the smart home systems are having a tremendous growth of normal network to home automation. Though the smart home technologies are being used currently but they are limited to individual houses. With the era of IoT, the traditional controlling systems are transforming to smart home systems. The smart home technologies are integrating with the IoT.

For best performance, to provide more services, effective management the cloud based services are coordinating with the smart home technology. The energy management systems in the home environments are equipped both inside and outside environments of the home. There may be issues regarding management. In real world approach the facilities like data and service sharing schemes among several entities is only possible by the community broker system. The community broker is a significant feature in this research.

The facilities like managing devices in the home environment is possible with the aid of community broker. The community broker provides many services like electronic services, labor requirement is eliminated. The location based services are implemented with the combination of community services and cloud services operating together. The MQTT protocol to provide control features in the smart home system. The HTTP protocol employed for transferring location based information.

2. RELATED WORK

In this paper the smart devices, multiple displays, cloud based services are the three classifications which are discussed below.

2.1 Smart devices

The Home energy management systems studies are being transformed from energy management in simple electrical appliances or devices to major or complex electrical appliance energy management. The data from home devices integrates with the cloud platform for deliberately increasing more services and security [1-3]. The Renewable energy like solar energy which is produced by the solar panels are causing issues with community spaces and HEMS spaces. It may also lead to overlap the operations and maintenance [4-6]. The smart home system provides the features like storing the data as well as access the information. The Safety in the home environment is mostly needed. The safety can be provided by integrating various sensors in the home environment [7-12]. In the smart home the functionalities like health care services can also be implemented with the use of cloud servers [13-15]. The sensor technology can facilitate more facilities like recognition of hand-gesture, activities involving in the detection of photos, recognition of emotion in the videos are some of the features enhanced in the sensor technology [16-19].

2.2 Multiple displays

Many display devices are there in this modern world. According to the convenience of the user, the user may utilize devices like tablet, PC, Phones. The user can operate or see the data of the devices with the display system [20], [21]. In the conventional interfaces the Televisions serve as home display devices. The integration of various sensors, enhancing of additional services is the new approach for multiple display [22], [23].

2.3 Cloud based services

For achieving high end automations in a home environment the servers and smart home system are equipped for the functionalities of authentication concern, multiple devices, privacy in data [24]. The smart home systems are being transferred into an intelligent system in the indoor and outdoor environments [25]. The challenges that are faced while employing both the cloud services and smart home systems is with the user terminals, servers must be

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Application of Grey Relational Analysis to Network Selection: A Case Study

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Abstract

Multiple wireless network availability has become a norm rather than an exception for the mobile users due to the advent of wireless technologies. In this context, user faces uncertainty in two situations, one in selecting the best network and another is maintaining connectivity while roaming through the heterogeneous networking environment. Network selection depends on multiple decisive factors like cost, bandwidth, delay, jitter, network utilization and packet loss etc., making selection process an uncertain and complicated task. To resolve such uncertainty, an efficient mathematical model Grey Relational Analysis (GRA) is applied to the problem of network selection. The selection process involves three stages–normalizing the multi-parameterized attributes, formulating weights to each attribute based on the user priorities and ranking the networks based on Grey Relational Coefficient(GRC). The results drawn through GRA model is compared with a conventional outranking method.

AMS Subject Classification: 90B30, 90B50, 90C29, 91B06
Key Words and Phrases: Call continuity, Grey Relational Analysis, Handoff, MADM, Network selection, PROMETHEE

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SPY ROBOT CONTROLLING THROUGH ZIGBEE USING MATLAB

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ABSTRACT

In today's world, in almost all sectors, most of the work is done by robots.In this paper, a spy robot can be developed by using natural gestures of the humans. The software part of the system uses gesture based image processing technique. This system uses a camera to capture the image of hand gesture. The capturedimage of the hand is processed to understand the gesture commands. Human machine interaction canbe developed by converting the gesture commands into a signal. The hardware part is developed based on Arduino microcontroller. The Spybot is programmed to understand the gesture command signal and navigate according to hand gestures. In this way the user can control the robot by simple hand gestures. The camera placed on the robot capture the images of its surrounding, wherever it travels and send it back to the PC for monitoring. The gesture commands can be used for controlling the Spybot functions such as movement of the robot, or other operations of the robot silently. The system can be directly applied to defence grounds for detection of enemy, for spying purpose where the human reach is avoided or not recommended.

Key words: *Gesture controlled robot, gesture signal processing, spybot, Zigbee module, Arduino Uno microcontroller board.*

I. INTRODUCTION

Now a days, humans are working on developing the new techniques of interacting with the robot. The gesture is one of these techniques which is more flexible than other. Gestures used for communicating between humans and machines as well as between people using sign language. Gesture can be static which requires less computational complexity (or) dynamic which are more complex but suitable for real time environments. Different methods have been proposed for acquiring information necessary for gesture recognition system. Some methods used additional hardware devices such as data glove devices and color markers to easily extract comprehensive description of gesture features other methods based on the appearance of the hand using the skin color to segment the hand and extract necessary features, these methods considered easy, natural and less cost comparing with other methods.

Some recent reviews explained gesture recognition system applications and its growing importance in our life especially for human computer interaction(HCI).The proposed work does not require any special equipment like glove or other devices to be attached to the body to sense

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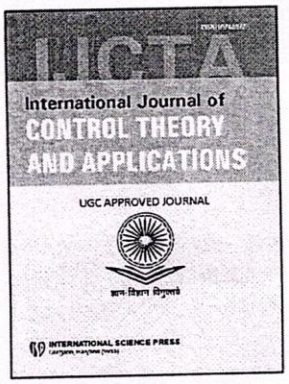

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Multimodal Home Security System using IoT and Raspberry Pi

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Abstract: The Security is a significant aspect in home native environments. The Security notion in native habitats like home is important because due to the increasing of thefts, fire accidents, entry of an intruder, poisonous gasses. The home security system integrated with IoT will respond dynamically like Real time application. The Biometric recognition system is playing a fundamental aspect in the home security systems. Among distinct biometric recognition systems available the fingerprint recognition system is the most suited for the enhancement of security system. The fingerprint and webcam both will result in a secured biometric system. The home security system is developed by employing Raspberry Pi 3. The information from the sensors, fingerprint and webcam that are nterfaced to the Raspberry Pi 3 are monitored and manipulated by the Administrator remotely. The IR fire and ten perature sensors interfaced with the Raspberry Pi 3central server provide the environmental conditions time to time. T e Administrator gives permission to the person who is requesting for the door access with the help of web page. Al the information from the Raspberry Pi 3 central server is available in the form of SMS and web page to the Adm nistrator, so that administrator can remotely control the system. In comparison with the existing home security systen s, this developed system greatly reduces the overall cost and can work efficiently and produce results in Real time.

Keywords: Fingerprint module, Fire Sensor, IoT, Raspberry Pi 3, temperature sensor, Webcam.

1. INTRODUCTION

The Smart home is a system which makes the home appliances available to the user via remote access. In any Smart home system while using the system, the user will get the facilities like convenient, remote access, comfort. The fundamental of IoT is to connect the devices to the user anytime, anywhere with the aid of network connectivity. The physical world and computer based systems are governed using IoT [1]. IoT employed with home devices is categorized into one-way and two-way devices. In one-way, the devices that are interfaced to the system are exclusively used to notify the administrator about their present conditions. In two-way, the devices that are interfaced with the system can both notify and respond to the Administrator instructions [2].

With the transformations made in embedded computing systems every device got the abilit to be uniquely identified. Internet of Things offers advanced connectivity of device, services and covers a varie y of protocols, applications. In the concept of IoT, the devices collect useful data with the help of numerous te hnologies and

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LBP BASED SHARPNESS PARAMETER BASED APPROACH FOR DE FOCUS BLUR ACTS ON A ROBUST SEGMENTATION ALGORITHM

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Abstract: *When an image is captured by any optical imaging devices in that image, defocus blurs is the common undesirable thing. It is either enhance or inhibit the visual perception of an image scene. In different image processing operations like image restoration and object detection we required to segment the partially blurred image into blurred and non-blurred regions. Our existing sharpness metric in this paper based on Local Binary Patterns and a robust segmentation algorithm for the defocus blur. The existing sharpness metric exploits the observation that the majority local image patches in blurred regions have considerably fewer of bounds native binary patterns compared with those in sharp regions. Mistreatment this metric, beside image matting and multiscale inference, we have a tendency to obtain high-quality sharpness maps. Tests on hundreds of partially blurred images were used to evaluate our blur segmentation algorithm and six comparator methods this project can obtain high-quality sharpness maps by introducing the LLBP (line local binary pattern).The proposed algorithm may give that it achieves comparative segmentation results with the state of art and has big speed advantage over the others.*

Key words: *Digital image processing, LBP pattern, Sharpness, image restoration, object recognition*

I. INTRODUCTION

Defocus estimation plays a crucial role in computer vision and computer graphics applications together with depth estimation, image quality assessment, image deblurring and refocusing. Different conventional methods have implemented on multiple images for defocussing. A set of images of the same scene is captured using multiple focus settings. Then the defocus is measured during a implicit or explicit deblurring process. Recently, image pairs captured using coded aperture cameras [5] are used for better defocus blur measure and all-focused image recovery. However, these methods suffer from the occlusion problem and require the scene to be static, which limits their applications in practice.

Estimating defocus blur is a challenging task mainly because the corresponding PSFs are spatially varying and cannot be represented by any global descriptor. Indeed, spatially varying defocus PSFs for a given camera can be pre-calibrated and described typically through a simple model (e.g. Disc, Gaussian) that is characterized by a single parameter indicating its scale (radius, standard deviation, etc.) For an image, we call the 2D map of the scale parameter the defocus blur map, which indicates the level of local blur at each pixel (see an example in Fig. 1). The main purpose of this paper is to provide an automatic way of estimating a defocus blur map from a single input image.

Defocus blur map estimation has several potential applications. For example, it can be employed to detect and segment in-focus subjects from the out-of-focus background, helping a photo editor to edit the subject of interest or the background, separately. Besides that, since defocus blur level is intimately related to the depth of the scene, a blur map also provides important information for depth estimation. The computation of depth information typically requires two photos of the same scene taken at the same time, but from slightly different vantage points, i.e. a stereo pair [6]. However, in most cases only one image is available. A blur map allows one to reconstruct a 3D scene from a single photograph as long as the camera settings (focal length, aperture settings, etc.) are known. For image restoration applications, if both the defocus PSF calibration and blur map estimation are made, we can reconstruct an all-in-focus image through a non-blind spatially varying deblurring process.

This method locally selects the best PSF by evaluating its deconvolution errors. It requires a specially designed aperture filter for the camera, which strongly limits its domain of application. Instead of estimating the optimal blur scale in the continuous domain, it can only identify the most likely candidate from a finite number of calibrated PSFs with somewhat limited accuracy. Chakrabarti et al. suggested a method estimating the likelihood function of a given candidate PSF based on local frequency component analysis without

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Image Based Currency Recognition System

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Abstract

The people may not recognize the original currencies from different countries. So, to solve this difficulty to the people, the system called "Image based currency recognition system" is helpful. However, the currency recognition system based on image analysis is entirely not sufficient. But, the proposed concept which is based on image processing will makes the process automatic and also robust.

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TWO-DIMENSIONAL EVOLUTIONAL SPECTRUM UNDER FADING CHANNEL

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[2] Associate Professor, Department of Electronics and Communication, S.R.K. Institute of Technology, Enikepadu, Vijayawada, A.P., India.

Abstract: *Broadband mobile communication systems experience fading over a wide frequency band. Most of the existing works on fading channel modelling assume wide-sense stationarity with respect to time and uncorrelated scattering w.r.t. delay. However, due to the time-varying movement of mobile terminals, fading is usually non-stationary w.r.t. time, i.e., the Doppler spectrum is non-stationary. To model non-stationary broadband mobile fading channels, in this project introduces a two-dimensional evolutionary spectrum (2D ES) approach, which is compatible with the power spectral density of a stationary process. Based on the 2D ES, an estimation method to estimate the 2D ES parameters from a trace of a fading process. In this project Nakagami-m fading channels are used which is non-stationary in both time and frequency domain. Developing SUI-3 2D ES based reference models further improves the non-stationary broadband channel modelling performance. This is a new research direction in the channel modelling.*

Key words:-*Two-dimensional evolutionary spectrum, non-stationary mobile fading channel, Nakagami-m fading, SUI channel model.*

I. INTRODUCTION

To meet the demand of mobile users on high data rates, broadband communication is needed. A broadband channel poses significant challenges to the design of mobile communication systems due to time dispersion (delay spread) and frequency dispersion (frequency spread)[1]. .An accurate and concise broadband channel model which characterizes both time and frequency dispersions is useful for channel simulation, performance evaluation and further design of broadband communication systems, especially for high speed vehicular transmissions. Usually, conventional broadband mobile fading channels have been characterized by wide-sense stationary (WSS) and uncorrelated scattering (US) fading channel models With WSS assumption, the Doppler effect caused by frequency dispersion can be described by the spectrum of channel gain process. To better characterize broadband mobile fading channels, it is of great importance to develop accurate and concise non-stationary channel models [2],[3].

In this paper, we extend the ES theory to 2D stochastic process, developing a 2D ES-based broadband channel modelling approach. Due to the fact that the auto correlation function of a 2D stochastic process is related to four variables at least, a 2D ES is not a simple product form or trivial linear combination of 1D ES. Based on 2D ES representation of the broadband fading channel, we discuss the 2D ES estimation and channel simulation in detail. The main contributions of this work can be summarized as follows.

- *A complete 2D ES theory is established and used to simulate non-stationary broadband fading channels.*
- *Combining with filter model for stationary channel modelling, we present a broadband mobile fading channel simulator based on the 2D ES theory.*
- *We show that the 2D ES holds a strong compatibility in the sense that the 2D ES density of a WSSUS channel can be degraded as the scattering function of the channel.*
- *The proposed 2D ES theory is applied to analyze a class of Nakagami-m fading channels.*
- *Further, to improve the performance of channel model SUI channel is considered and the proposed 2D ES theory are applied to SUI channel model.*

II. EVOLUTIONARY SPECTRUM FOR NON-STATIONARY BROADBAND FADING CHANNEL

First we introduce a 2D ES for non-stationary broadband mobile fading channels. Then we present how to estimate the 2D ES and evaluate the estimation error in detail.

A) The 2D ES representation of broadband mobile fading channels

Let us denote the complex channel gain of a broadband mobile fading channel by $h(t, \tau)$ where t and τ represent the time and the delay, respectively. Usually, $h(t,\tau)$ is

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DESIGN OF HORN ANTENNA ARRAYSFOR THE GENERATION OF LOW SIDELOBES

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ABSTRACT

The source of electromagnetic waves is antenna. Antenna is a device which radiates electromagnetic energy into free space in all directions single antenna characteristics like high beam width, low gain and low bandwidth are not sufficient in radar communication system for beam steering array antennas are designed for improving the parameters of beam width, gain and bandwidth.

In the conventional arrays side lobe level -13.5 dB is the obstacle to find the object in the radar system since main beam to first side lobe level is -13.5 dB. In the first side lobe level the most of the power is diverted from main beam, to overcome this and reduce the side lobe level is the array system. Standard amplitude distribution is used to reduce side lobe level. In this work triangular amplitude distribution is used to reduce the side lobe level up to -26.8dB. The standard Horn antenna is used in this work to produce narrow beams and high gain. By neglecting inter element interference the desired Horn arrays for N=10, 20, 40, 60 are designed. By adopting standard amplitude distribution to these arrays side lobe level are also reduced and are compared with the isotropic arrays. The results come up with good agreement.

KEYWORDS: Antenna Arrays, Horn Antenna, Side Lobe Level, Pattern Multiplication, Amplitude Distribution

INTRODUCTION

An antenna is a conductor that can transmit, send and receive signals such as microwave, radio or satellite signals. A high-gain antenna increases signal strength, where a low-gain antenna receives or transmits over a wide angle. In transmission, a radio transmitter supplies an electric current oscillating at frequency. In reception, an antenna intercepts some of the power of an electromagnetic wave in order to produce a tiny voltage at its terminals that is applied to a receiver to be amplified. A horn antenna or microwave horn is an antenna that consists of a flaring metal waveguide shaped like a horn to direct radio waves in a beam. Horns are widely used as antennas at UHF and microwave frequencies. [1][7].

The horn antenna is the simplest and probably the most widely used microwave radiator. It is used as the feed for large reflector and lens antennas in communication systems throughout the world. It is also a high gain element in phased arrays. Because horn antennas are highly accurate radiating devices, they are often used as standard-gain devices for the calibration of other antennas. The application of electromagnetic horns has been explored for nearly a century. Extensive investigations ofhorn antennas have been of increasing interest during the past three decades. A suitable developments of the fields at the transition of the conical/corrugated horn to free space using the mode-matching technique is reported by Ralf R. Collmannet. Al [2]. But the finite-difference time-domain (FDTD) method is used to accurately analyze TEM horn antennas for pulse radiation [4]. The transition from the feeding waveguide to the radiating aperture is analyzed by using

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Simultaneous Phase Balancing and Network Reconfiguration for Radial Distribution System through PGSA – Fuzzy-ODE Algorithm

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Abstract –Distribution networks transport electric energy to the end user from distributionsubstations. They are usually arranged as radial to shorten over-current protection. Utilities are constantly looking for newer technologies that enhance power delivery performance. The control of power loss and balancing of feeders are the two important issues which decide the performance of the delivery system. This paper presents a hybrid PGSA-Fuzzy-ODE (Plant Growth Simulation Algorithm – Fuzzy – Opposition Based Differential Evolution) algorithm for multi-objective network reconfiguration. The objectives are minimizing the power loss, minimizing the phase current deviation and minimizing the deviation of the nodes voltage, subjected under radial network structure with all loads served. The optimization approach based on PGSA provides a detailed description on switch states, incorporation of fuzzy helps to take up multiple objectives simultaneously and ODE to ensure the retrieval of global optimum solution. The proposed algorithm is implemented through J2EE (Java 2 Enterprise Edition) architecture to reduce software couplings and to achieve software reusability. The effectiveness of the proposed approach is demonstrated by employing the feeder switching operation scheme to modified IEEE-125 unbalanced power distribution system.

Keywords: Network reconfiguration, Phase balancing, PGSA, fuzzy, differential evolution

1. Introduction

Feeder reconfiguration is a very important tool to operate the distribution system at minimum cost and improve the system reliability and security. The reconfiguration of a distribution system is a process, which alters the feeder topological structure by changing the open/close status of the switches and/or swapping the loads among phases. The system level reconfiguration has been done for the loss reduction; rather feeder level reconfiguration (phase swapping) has been carried for the phase current deviation reduction. The presence of high number of switching elements in a radial distribution system makes the network reconfiguration a highly complex combinatorial, non-differentiable and constrained non-linear mixed integer optimization problem. Furthermore, distribution systems are unbalanced in nature due to unbalanced loading at the nodes. Unbalanced loading increases energy loss and risk of capacity constraint violation and also deteriorates power quality and rise in electricity cost. The imbalanced feeder system can be balanced by implementing the phase swapping technique. Phase balancing not only concentrates on phase currents but also improves voltage, security and reliability. This result in a power service with higher quality and lower cost, and will improve the utility's competitive edge in the deregulated markets. The demand for a radial operation also makes the mathematical model more difficult to represent efficiently and codification of a solution becomes difficult when meta-heuristic techniques are employed. These necessitate feeder reconfiguration at system level for loss reduction and feeder level for phase balancing. Considerable research works has been carried out for reconfiguration in system and feeder levels.

The feeder reconfiguration problem has been dealt with in various papers. Civanlar et al.[1] conducted the early work on feeder reconfiguration for loss reduction. In [2], Baran et al. defined the problem of loss reduction and load balancing as an integer programming problem. Aoki et al. [3] developed a method for load transfer, in which the load indices were used for load balancing. In Shirmohammadi and Hong [4], the solution method starts with a meshed distribution system obtained by considering all switches closed. Then, the switches are opened successively to eliminate the loops. The plant growth simulation algorithm (PGSA) is employed to optimize the network configuration of the distribution system [10-15]. The PGSA provides a detailed description on switch state and decision variables, which greatly contracts the search space and hence reduces computation effort. For unbalanced distribution network reconfiguration problem, simple reconfiguration approaches had been practiced for phase balancing in [11]. The solution techniques were not suitable under all the conditions of the distribution system. The method to identify phase swapping schemes to balance a radial feeder system based on the loads at each load point had been described in [13]. Simulated annealing procedure had been adopted for phase balancing for large-scale system. This technique is realized as time-consuming compared to the other heuristic techniques and does not guarantee to bring the global optimum solution. A heuristic rule-based algorithm with backtracking search [12] had been proposed to solve the phase balancing

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IoT Vulnerabilities and Security

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***Abstract*— Internet of things has be broadly applied for home, industry, health care, environment and many other applications. For these applications, secure information transmission becomes a critical issue to ensure the system safety. Present distributed denial-of-service attacks demonstrate the high vulnerability of Internet of Things (IoT) systems and devices. Addressing this challenge will require scalable security solutions optimized for the IoT ecosystem. In this paper we discussed vulnerabilities of IoT and ways to provide security to IoT.**

Keywords: *Internet of Things (IoT); Denial-of-service; Vulnerability; Security*

I INTRODUCTION

The IoT technology offers extraordinary opportunities to interconnect human beings as well as Machine-to-Machine(M2M) communication, whereby sensors and networks allow all things to communicate directly with each other to share information and allow us to have an instrumented universe where accurate data is readily available to inform optimal decision making[1]. This revolution is based on a constant evolution of the Internet, technologies and software, communication protocols, embedded sensors, smart physical objects able to collect data in real time. It's the future internet, it will dramatically change our way of living as the Internet impacts on education, health, homes, communications, transportation, cities, business, science, government and men in general. However, several issues are threatening the IoT development, like the privacy and security in this technology. The vision of an Internet of Things (IoT) is coming closer to realisation with each passing day, where physical objects will have virtual representations they will be controlled remotely and acts as physical access points to Internet services, increasing the need for confidentiality, which currently is accomplished by cryptographic schemes

II A STANDARD IoT PLATFORM

The IoT is consists of the three core components: A collection of smart, connected products, product systems, and other Things connected through an Internet-like communication infrastructure to a computing infrastructure that are creating new forms of value. Data from the product condition, operation, and environment are delivered in real-time enabling capabilities to control, service, and upgrade the product and system performance. [2]. Any security architecture must address the security requirements of the object itself with its OS and computational capabilities, the mobile and the cloud parts. The security and privacy of communications between object and cloud / mobile applications and objects through its access point will be implemented essentially in the middleware of the device.

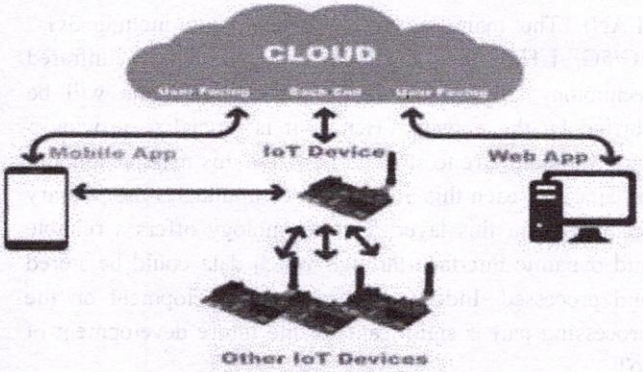

Figure 1 Typical structure of IoT platform

III LAYERS OF IoT

A well defined IoT architecture is still not established. However, a three-layer high level architecture is commonly accepted . This architecture consists of three layers: Perception Layer, Network Layer, and Application layer

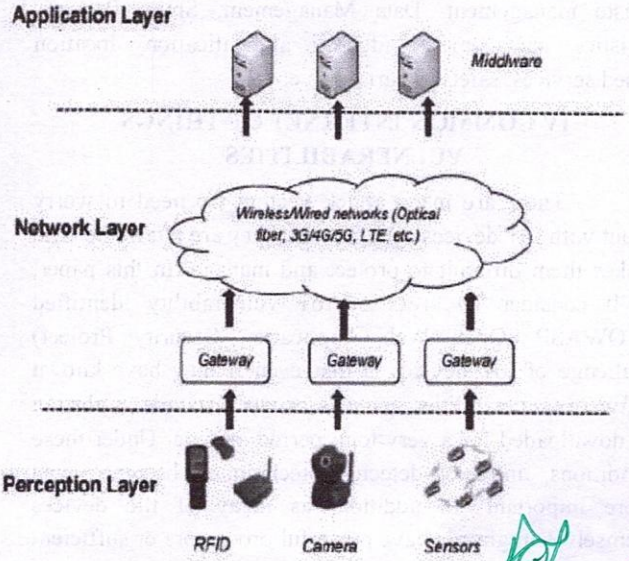

Figure 2 Layers of IoT

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COMPARATIVE ANALYSIS BETWEEN CLASSIFICATION ALGORITHMS AND DATA SETS (1: N & N: 1) THROUGH WEKA

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Abstract: Data mining is a stage in the knowledge disclosure process comprising of data mining algorithms that used to discovers patterns in the data. Data Mining likewise can be characterize as an analytic procedure proposed to consider a large data in scan for reliable patterns and deliberate connections amongst factors and after that to agree the discoveries by applying on new subsets of data by the distinguished patterns. Classification [14] is the mainly usually attached data mining system, which utilizes an plan of pre-classified cases to construct a model that can order the number of inhabitants in records on the loose. In classification strategies a model is manufactured in view of preparing data and connected to test data. WEKA is an open source data mining apparatus which incorporates usage of data mining algorithms. In this paper explain about two different tasks Compare between different Datasets with single algorithm and Comparison between different classification Algorithms with Single dataset through different factors.

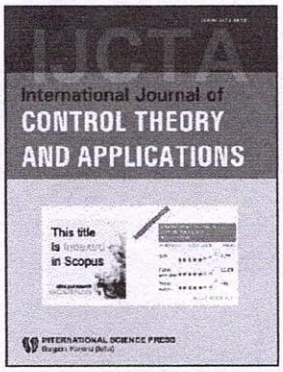
Keywords: Data mining, classification algorithms, datasets, MAE, RMSE, RAE, RRSE.

I INTRODUCTION

Data mining [1][20][21][22] is a method of quickly developing interdisciplinary field, which consolidates database management, statistics on datasets, machine learning algorithms and related regions going for removing helpful knowledge from vast accumulations of data. The data mining process comprises of three essential stages: investigation, build model or pattern definition, and validate/confirmation. In a perfect world, if the idea of accessible data permits, it is commonly rehashed iteratively until a "robust/standard" model is distinguished. In any case, in business tradition the alternatives to approve the model at the phase of examination are commonly restricted and, in this way, the underlying outcomes frequently have the status of heuristics that could impact the choice procedure.

Data mining should be possible with vast number of algorithms and strategies which include regression analysis, classification techniques, clustering techniques, and association rules, artificial intelligence, neural networks, and so forth. Basically classification [14] and clustering algorithms also known as supervised and unsupervised classification. Supervised learning means Supervision: The training data (observations, measurements, etc.) are accompanied by labels indicating the class of the observations, that new data is classified based on the training set. Unsupervised learning means the class labels of training data is unknown given a set of measurements, observations, etc. with the aim of establishing the existence of classes or clusters in the data. WEKA[26] incorporates usage of different classification algorithms [14] like *"Bayes Net classifier"*, *"NAIVE BAYES"* [25], Meta-Ada Boost- M1, Attribute Selected Classifier, Iterative classifier optimizer, Multiclass Classifier, Randamizable Filtered classifier, Decision Table[24] using single dataset from UCI dataset repository [2].

Naive Bayes and Bayes net algorithms [4] were successfully utilized for apparatus condition checking too [3]. Naive Bayes classification algorithm [6] is a probabilistic classifier and utilizations statistical method for every classification. Bayes Net model represents probabilistic connections among an arrangement of random factors graphically. It shows the quantitative quality of the associations between factors, enabling probabilistic convictions about them to be refreshed consequently as new data that ends up noticeably accessible. This is a *"Coordinated Acyclic Graph"* (DAG) G that determines a combined likelihood conveyance, where the different nodes of graph stand for random variable and circular segment stand for relationship between variables [7]. A decision table is a straightforward structure to use "divide and conquer method to separate an composite decision making process into an accumulation of more straightforward decisions, subsequently giving an effectively interpretable arrangement [8][9][10][16]. The decision table is simple to understand and



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A Methodology for Anticipating Risk Score for Congestive Heart Failure Patients

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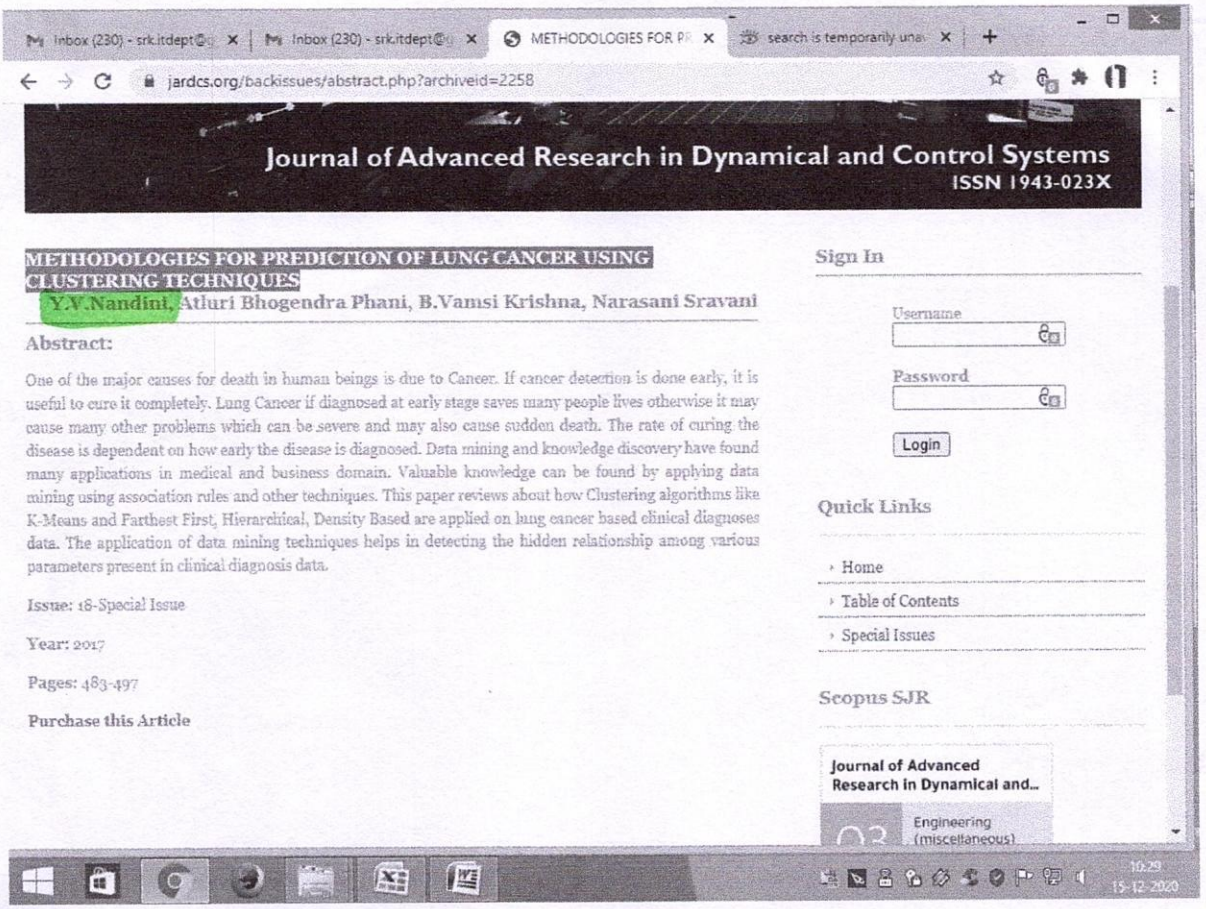
[3] Assistant Professor, Department of CSE, DVR & Dr.HS MIC College of Technology, Kanchikacherla & Research Scholar, Dept. of CSE, K L University, Guntur

Abstract: Now-a-days health care environment is becoming more prominent and the hospitalizations are increasing day by day. According to the surveys held by various organizations the unnecessary hospitalizations are raising and as a result the costs of care are increasing tremendously. So, this factor matters a lot to the government at the time of planning the budget [1]. So, in order to avoid the raising costs the monitoring of health care should be done. Analyzing the risk factor to particular patient will help the health status of the particular patient, continuous hospitalizations of the patient there by reducing the costs of care. This can be done by developing various predictive modeling approaches. Risk Identification and prediction is extremely challenging in healthcare informatics. Risk prediction contains the integration of various clinical parameters with socio-demographic factors, health care conditions, disease factors, hospital care and quality parameters, and a variety of factors that are constrained to each health care provider making the task increasingly difficult. Predictably, [2] many of such parameters need to be extracted individually from various sources, and integrated back to improve the quality of predictive modeling. In this paper, we propose various solutions to predict the risk rate for heart failure patients and matching suggestions to control the risk rate like the drug dosage and thereby improving the quality of life. We used a methodology to predict the risk rate and develop the scalable data mining models to predict risk of readmission. We reveal the effectiveness of the algorithm we used, describe the results of the algorithm we tested, and compare the performance against various records and differentiate the accuracy between the existing and proposed techniques.

Keywords: Healthcare; Knowledge-Discovery; Risk Prediction;

1. INTRODUCTION

Hospital readmissions are becoming more expensive and possibly preventable. Dropping the rates of readmission is measured as a key quality of care parameter that is deemed measurable. Yet, it is still thought-provoking to implement accurate predictive models to predict such risk and the importance of factors that contribute to readmission due to the diversity of data sources even within a single large hospital. Add to this the aspiration of obtaining a holistic view of cause for readmissions[3] by integrating socioeconomic parameters and external data with existing clinical data, and this problem becomes even more challenging and complex requiring significant advances in data integration, discretization[4], normalization and data organization. A diversity of factors could



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METHODOLOGIES FOR PREDICTION OF LUNG CANCER USING CLUSTERING TECHNIQUES

Y.V.Nandini, Atluri Bhogendra Phani, B.Vamsi Krishna, Narasani Sravani

Abstract:

One of the major causes for death in human beings is due to Cancer. If cancer detection is done early, it is useful to cure it completely. Lung Cancer if diagnosed at early stage saves many people lives otherwise it may cause many other problems which can be severe and may also cause sudden death. The rate of curing the disease is dependent on how early the disease is diagnosed. Data mining and knowledge discovery have found many applications in medical and business domain. Valuable knowledge can be found by applying data mining using association rules and other techniques. This paper reviews about how Clustering algorithms like K-Means and Farthest First, Hierarchical, Density Based are applied on lung cancer based clinical diagnoses data. The application of data mining techniques helps in detecting the hidden relationship among various parameters present in clinical diagnosis data.

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IoT Vulnerabilities and Security

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Assistant Professor, Information Technology, SRKIT, Vijayawada, A.P., India.[1 2]
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The IoT technology offers extraordinary opportunities to interconnect human beings as well as Machine-to-Machine(M2M) communication, whereby sensors and networks allow all things to communicate directly with each other to share information and allow us to have an instrumented universe where accurate data is readily available to inform optimal decision making[1]. This revolution is based on a constant evolution of the Internet, technologies and software, communication protocols, embedded sensors, smart physical objects able to collect data in real time. It's the future internet, it will dramatically change our way of living as the Internet impacts on education, health, homes, communications, transportation, cities, business, science, government and men in general. However, several issues are threatening the IoT development, like the privacy and security in this technology. The vision of an Internet of Things (IoT) is coming closer to realisation with each passing day, where physical objects will have virtual representations they will be controlled remotely and acts as physical access points to Internet services, increasing the need for confidentiality, which currently is accomplished by cryptographic schemes

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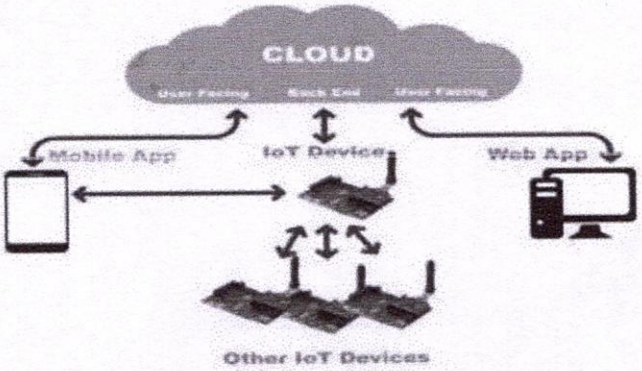

Figure 1 Typical structure of IoT platform

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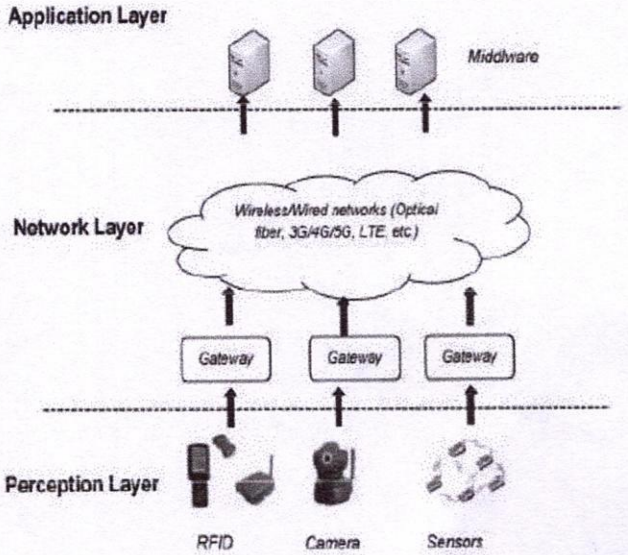

Figure 2 Layers of IoT

General Management Practices of SHG's: A Case Study of Income Generating Women in W.G. District

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***Prof. D. Surya Chandra Rao,** Registrar, Krishna University, Machilipatnam, Andhra Pradesh, E-mail: profdsrao@gmail.com, Ph: 9440149149.*

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Abstract

The Self Help Group is considered as a viable organisation of the rural poor particularly women, who are the marginalized groups of our society due to the present of socio-economic constraints in the rural areas, for delivering micro credit in order to undertake entrepreneurial activities. It is estimated that there are more than five hundred million economically active poor people in the world operating micro enterprises and small businesses. Most of them do not have access to adequate financial services. Microfinance has garnered significant worldwide attention as a successful tool to meet this demand for financial services by low-income micro entrepreneurs. India now occupies a significant place and a niche in global microfinance through promotion of the self-help groups (SHGs). This paper reviews the general management practices followed in the sample respondents' SHGs.

***Keywords:** SHGs, Management Practices, Meetings, Attendance, Rules.*

General Management Practices

The Common general practices of the SHGs are the number of meetings per month held by SHGs, attendance of members and participation of members in the group meetings are indicators of the well functioning of the SHGs. These are generally looked into by banks before deciding on extending credit facilities to the SHGs. Ideally, the meetings should be held weekly or at least monthly, so that members get together frequently, establish bonds and understand each others' difficulties. Attending meetings and participating in the discussions, and having knowledge about the rules and regulations of the SHG also imply that the members are empowered to take part in the decision-making processes.

Objective of the Study

The objective of the study is to review the Management Practices of Women Self Help Group members in West Godavari District.

SHG at Glance in West Godavari District:

West Godavari is one of the districts in Coastal Andhra region situated on the bank of the Godavari. It comprises 8,37,684 households. Of these total households the poorest of the poor (POP) and poor households constitute 42.05% accounting for 3,52,276 households. To eradicate rural poverty, community based organizations have been formed, which consist of *61,870* self-help groups. Of them 60,311 SHGs are formed with POP and the poor. They constitute 97.48 % of the total SHGs. The total 61,870 SHGs comprise of 6,29,328 members.

Methodology

The study uses both primary data and secondary data. Multi-stage random sampling method is used for the present study to collect primary data. Three mandals (Pedavegi, Jangareddygudem & Narasapuram) are selected for the present study. From each mandal, 100 SHG members, who are engaged in income generating activities, are selected randomly. Thus, the total sample size is 100. Primary data was collected from the 300 sample respondents using pre-tested questionnaire.

Table: 1.1

S.No.	Name of the Mandal	Total No. of SHG's	No. of SHG Members	No. of SHG MembersTaken for sample
1	Pedavegi	1523	16594	100
2	Jangareddygudem	1456	14633	100
3	Narasapuram	1392	14519	100
	Total	4371	45746	300

Frequency of Meetings

It is found from the study the all the sample respondents are holding meetings. Sample respondents are also asked to inform frequency of meeting. Table – 1.2 indicates distribution of the sample respondents by frequency of meetings. It is revealed from the table that the group meetings are mostly conducted on monthly basis generally in the study area to discuss functioning of the group (96 %), followed by fortnightly (2 %) and weekly (2 %). It is interesting to note from the study that besides these general meetings, sample respondents are also holding meetings whenever necessary, say, when a member is in a problem or when a member requires internal group loan. Regarding frequency of meetings among different categories of respondents, it is clear from the table that majority of the respondents of all categories of respondents holding meetings once in a month. Some of the clothes business women and vegetables vending business women are conducting meetings fortnightly, whereas a few of the grocery shop business women and fancy shop business women are holding meetings once in a week

General Management Practices of SHG's: A Case Study of Income Generating Women in W.G. District

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Methodology

The study uses both primary data and secondary data. Multi-stage random sampling method is used for the present study to collect primary data. Three mandals (Pedavegi, Jangareddygudem & Narasapuram) are selected for the present study. From each mandal, 100 SHG members, who are engaged in income generating activities, are selected randomly. Thus, the total sample size is 100. Primary data was collected from the 300 sample respondents using pre-tested questionnaire.

Table: 1.1

S.No.	Name of the Mandal	Total No. of SHG's	No. of SHG Members	No. of SHG MembersTaken for sample
1	Pedavegi	1523	16594	100
2	Jangareddygudem	1456	14633	100
3	Narasapuram	1392	14519	100
	Total	4371	45746	300

Frequency of Meetings

It is found from the study the all the sample respondents are holding meetings. Sample respondents are also asked to inform frequency of meeting. Table – 1.2 indicates distribution of the sample respondents by frequency of meetings. It is revealed from the table that the group meetings are mostly conducted on monthly basis generally in the study area to discuss functioning of the group (96 %), followed by fortnightly (2 %) and weekly (2 %). It is interesting to note from the study that besides these general meetings, sample respondents are also holding meetings whenever necessary, say, when a member is in a problem or when a member requires internal group loan. Regarding frequency of meetings among different categories of respondents, it is clear from the table that majority of the respondents of all categories of respondents holding meetings once in a month. Some of the clothes business women and vegetables vending business women are conducting meetings fortnightly, whereas a few of the grocery shop business women and fancy shop business women are holding meetings once in a week

Mutual Funds as a Tool for Financial Inclusion

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Abstract:

Financial inclusion is assumed to be one of the key drivers of our vision of an inclusive society and inclusive economy. Financial inclusion is integral to the inclusive growth process and sustainable development of the country. However, the financial inclusion growth model which came up with lots of expectations should be replicable and viable across the country. The main goal of financial inclusion is to improve the range, quality and availability of financial services and products to the unserved, under-served and financially excluded. The mutual fund organizations are taking active part in financial inclusiveness and they are promoting investment habit among the investors. The present article throws a light on this financial inclusion concept and how far this concept matches with Mutual Funds and helps to grow. As Mutual Funds pool the savings of retail investors, the financial inclusion concept may be adopted experimentally. The purpose of this paper is to examine the role of mutual funds in financial inclusion.

Keywords : *Financially Excluded, Financial Inclusion, Financial Services, Inclusive Growth.*

Introduction

The challenge for the success of financial inclusion lies in the fact that the reach of financial product to villages and small towns has to be made convenient. Mutual funds, being low risk, enables the common man to participate in the capital market and there by benefits from the Indian growth. India's economy has grown tremendously in the last decade. But one of the biggest challenges has been inclusive growth. Financial inclusion in particular has been limited even though the savings rate of 37 percent is one of the highest in the world. The poor and the middle class find it difficult to access the financial sector and do not invest their savings in mainstream products.

Traditional products and the banking channel have not been able to make much difference. There are about 600 million people who do not have a bank account and only 15 million invest in the Indian stock market, which is one of the best in the world in terms of investment opportunities. This shows that there is a huge gap between savings and its productive deployment. The government is trying its best to use the banking channel to deepen financial inclusion. Banks which have the largest customer base can become true catalysts to bring about financial inclusion. But banks alone will not be able to achieve this if we do not find alternative vehicles. Mutual funds, an indirect route for investment in the equity market, can effectively be used for the purpose of financial inclusion. Mutual funds, which are an instrument where the investment required is low and any salaried person or person with limited income can invest, can enable the common man to participate in the capital market and thereby benefit from the Indian growth story.

Mutual funds are considered ideal for entering the capital market. They have low risk, offer high returns, no long-term taxation, high liquidity and safety of capital. Currently only 45 per cent of the population has access to a bank account and India has a very low ratio of one bank branch per 16,000 people. The Reserve Bank of India (RBI) aims to cover 73,000 villages having population of more than 2000 by March 2012, wherein each individual should have a bank account to enable direct cash subsidies to be transferred into these accounts. The efforts of the central bank are worth noting but they fall short in terms of reach and accessibility. While the cost of opening an account and maintaining it is Rs. 65 less than 20 per cent of such accounts remain active a year after opening. Banks have their own limitations in opening rural branches and setting up ATMs is costly since an ATM is viable only if there are200 transactions per day.

The Indian mutual funds industry started with the formation of the Unit Trust of India in 1963 under the Unit Trust of India Act 1963. Today, there are about 40 mutual funds registered in India and the total assets under management are about Rs. 1500 billion. For private banks who deal in wealth management, mutual funds are one of the core investment products they offer. Public sector banks also engage in the selling of mutual funds.

Financial Inclusion for Inclusive Growth

Financial exclusion is a common phenomenon in rural areas. A large number of small and marginal farmers, agricultural labourers and rural artisans are still excluded from wide range of financial services. The challenges of achieving more inclusive growth can be met by a policy that encourages easier and affordable access to financial services. Financial inclusion may be defined as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost.

Financial Inclusion in India

Financial inclusion or inclusive financing is the delivery of financial services at affordable costs to sections of disadvantaged and low income segments of the society. It is argued that as banking services are in the nature of public good, the availability of banking and payment services to the entire population without discrimination is the prime objective of this public policy. The term "financial inclusion" has gained importance since the early 2000s, and is a result of findings about financial exclusion and its direct correlation to poverty. Financial inclusion is now a common objective for many central banks among the developing nations. The Reserve Bank of India (RBI) set up the Khan Commission in 2004 to look into financial inclusion and the recommendations of the commission were incorporated into the mid-term review of the policy (2005–06).

Mutual Funds as a Tool for Financial Inclusion

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Brand Pruning-A Powerful Weapon for Corporate Success

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Keywords: **Rationalization, sings of Brand Pruning, Utility, Portfolio Analysis Sheet.**

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FINANCIAL INCLUSION: SERVICES AND STRATEGIES OF RETAIL BANKING

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ABSTRACT

The benefits of economic growth have not equitably reached different parts of our society. The rural and agricultural sector, in particular, has not gained the desired momentum of growth and development.

Access to finance by the poor and vulnerable groups is a prerequisite for poverty reduction and social cohesion. This has to become an integral part of our efforts to promote inclusive growth. In fact, providing access to finance is a form of empowerment of the vulnerable groups. The various financial services include credit, saving, insurance payments and remittance facilities. The objective of financial inclusion is to extend the scope of activities of the organized financial system to include within its ambit people with low incomes. Through graduated credit, the attempt must to be lifting the poor from one level to another so that they come out of poverty.

As the economy began to grow at higher rates, the regional and societal disparities called for new strategies to ensure that the banking system met the requirements of inclusive growth. Such strategies needed to be fashioned in a manner that they did not undermine the stability and efficiency of the financial system. Specific focus on financial inclusion commenced in November 2005, when Reserve bank advised banks to make available a basic banking 'no-frills' account with low or nil balance as well as charges, with a view to expanding the outreach of such accounts. In such accounts, banks are required to make available all printed material used by retail customers in the regional language concerned.

Financial inclusion rest on three pillars viz., access to financial services, affordability of such services and actual utilization of such services. Financial inclusion can be achieved only if all the three pillars show affirmative results.

Key Words: Financial Services, Inclusive Growth, Financial Inclusion, Organized Financial System.

INTRODUCTION

Financial Inclusion means extending the banking habit and ensuring access to financial services and adequate credit where needed by vulnerable groups such as weaker sections and low income groups at an affordable cost. But the path of financial inclusion is daunting. The benefits of economic growth have not equitably reached different parts of our society. The rural and agriculture sector, in particular, has not gained the desired momentum of growth and development.

The Recent developments in banking technology have transformed banking from the traditional brick – and – mortar infrastructure like staffed branches to a system supplemented by other channels like automated teller machines (ATM), credit /debit cards, internet banking, online money transfers, etc. The moot point, however, is that access to such technology is restricted only to certain segments of the society. Indeed, Some trends, such as increasingly sophisticated customer segmentation technology – allowing, for example, more accurate targeting of sections of the market – have led to restricted access to financial services for some groups. There is a growing divide, with an increased range of personal finance options for a segment of high and upper middle income population and significantly large section of the population who lack access to even the most basic banking services. This is termed "financial exclusion". These people, particularly, those living on low incomes, cannot access mainstream financial products such as bank accounts, credit, remittances and payment services financial advisory services, insurance facilities, etc.

Deliberations on the subject of Financial Inclusion contributed to a consensus that merely having a bank account may not be a good indicator of financial inclusion. Further, indebtedness as quantified in the NSSO 59th round (2003) may not also be a reflective indicator. The ideal definition should look at people who want to access financial services but are denied the same. If genuine claimants for credit and financial services are denied the same, then that is case of exclusion. As this aspect would raise the issue of credit worthiness or bank ability, it is also necessary to dwell upon what could be done to make the claimants of institutional credit bankable or creditworthy. This would require re-engineering of existing financial products or delivery systems and making them more in tune with the expectations and absorptive capacity of the intended clientele.

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INTERNATIONAL JOURNAL FOR RESEARCH & DEVELOPMENT IN TECHNOLOGY

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Experience of Technology Changes by Commercial Banks in India

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Abstract: ***This paper discusses the technological change and financial innovation that commercial banking has experienced during the past twenty-five years. This article indicates the role of financial system in economics and how technological change and financial innovation can improve social welfare. The literature review is relating to several financial innovations, which focuses the new products or services, production processes or organizational forms. In this article to find out the past quarter century has been a period of substantial change in terms of banking products, services, and production technologies. Moreover, while much effort has been devoted to understanding the characteristics of users and adopters of financial innovations and the attendant welfare implications, and to know little about how and why financial innovations are initially developed.***

Key Words: Technological Change, Financial Innovation, Production Process

Introduction

The commercial banking business has changed dramatically over the past 25 years, due in large part to technological change. Advances in telecommunications, information technology, and financial theory and practice have jointly transformed many of the relationship focused intermediaries of yesteryear into data-intensive risk management operations of today. Consistent with this, we now find may commercial banks embedded as part of global financial institutions that engage in a wide variety of financial activities.To be more specific, technological changes relating to telecommunications and data processing have spurred financial innovations that have altered bank products and services and production processes. For example, the ability to use applied statistics cost-effectively (via software and computing power) has markedly altered the process of financial intermediation. Retail loan applications are now routinely evaluated using credit scoring tools, rather than using human judgment. Such an approach makes underwriting much more transparent to third parties and hence facilities secondary markets for retail credits (e.g., mortgages and credit card receivables) via securitisation. Statistically based risk measurement tools are also used to measure and manage other types of credit risks- as well as interest rate risks-on an ongoing basis across entire portfolios. Indeed, tools like value-at-risk are even used to determine the appropriate allocation of risk-based capital for actively managed portfolios.It will describe how technological change has spurred financial innovations that have driven the aforementioned changes in commercial banking over the past 25 years. In this respect, the analysis distinguishes itself by reviewing the literature on a large number of new banking technologies and synthesizing these studies in the context of the broader economics literature on innovation.The various innovations in banking and financial sector are ECS, RTGS, EFT, NEFT, ATM, Retail Banking, Debit & Credit cards, free advisory services, implementation of standing instructions of customers, payments of utility bills, fund transfers, internet banking, telephone banking, mobile banking, selling insurance products, issue of free cheque books, travel cheques and many more value added services.

The Role of Finance and Financial Innovation

The primary function of a financial system is to facilitate the allocation and deployment of economic resources, both spatially and across time, in an uncertain environment. This function encompasses a payments system with a medium of exchange; the transfer of resources from savers to borrowers; the gathering of savings for pure time transformation and the reduction of risk through insurance and diversification.The operation of a financial system involves real resource costs employed by financial intermediaries and by financial

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The Role of Finance and Financial Innovation

The primary function of a financial system is to facilitate the allocation and deployment of economic resources, both spatially and across time, in an uncertain environment. This function encompasses a payments system with a medium of exchange; the transfer of resources from savers to borrowers; the gathering of savings for pure time transformation and the reduction of risk through insurance and diversification.The operation of a financial system involves real resource costs employed by financial intermediaries and by financial

Overview of Intellectual Property Rights (IPR)

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Abstract— Intellectual property rights are a bundle of exclusive rights over creations of the mind, both artistic and commercial. The former is covered by copyright laws, which protect creative works such as books, movies, music, paintings, photographs, and software and gives the copyright holder exclusive right to control reproduction or adaptation of such works for a certain period of time. This paper focuses on the basic concepts of Intellectual Property, its types and issues involved in IPR.

Key words: Intellectual Property, Trademarks, Copyrights, Patents, Trade Secrets

I. INTRODUCTION

Intellectual property (IP) is a legal field that refers to creations of the mind such as musical, literary, and artistic works; inventions; and symbols, names, images, and designs used in commerce, including copyrights, trademarks, patents, and related rights. Under intellectual property law, the holder of one of these abstract "properties" has certain exclusive rights to the creative work, commercial symbol, or invention by which it is covered.

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The second category is collectively known as "industrial properties", as they are typically created and used for industrial or commercial purposes. A patent may be granted for a new, useful, and non-obvious invention, and gives the patent holder a right to prevent others from practicing the invention without a license from the inventor for a certain period of time. A trademark is a distinctive sign which is used to prevent confusion among products in the marketplace.

An industrial design right protects the form of appearance, style or design of an industrial object from infringement. A trade secret is an item of non-public information concerning the commercial practices or proprietary knowledge of a business. Public disclosure of trade secrets may sometimes be illegal.

The term "intellectual property" denotes the specific legal rights described above, and not the intellectual work itself.

The importance of intellectual property in India is well established at all levels- statutory, administrative and judicial. India ratified the agreement establishing the World Trade Organization (WTO). This Agreement, inter-alia, contains an Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) which came into force from 1st January 1995. It lays down minimum standards for protection and enforcement of intellectual property rights in member countries which are required to promote effective and adequate protection of intellectual property rights with a view to reducing distortions and impediments to international trade. The obligations under the TRIPS Agreement relate to provision of minimum standard of protection within the member countries legal systems and practices.

The Agreement provides for norms and standards in respect of following areas of intellectual property:

- Copyrights and related rights
- Trade Marks
- Geographical Indications
- Industrial Designs
- Lay out Designs of Integrated Circuits
- Protection of Undisclosed Information (Trade Secrets)
- Patents
- Plant varieties

Intellectual Property (IP) is the information and original expression that brings its original value from creative ideas with a commercial value. Intellectual property allows the people to have fully independent ownership for their innovations and creativity like that for their own physical property. By safeguarding such innovations, can lead to the owner of IP can be encouraged for further innovations to the benefit of the society in general. It may not be possible to protect IP and obtain intellectual property rights unless they have been applied for the sanction obtained.

Most of the countries having large number of local industries with innovative designs have specific laws to safeguard the innovations by some regulations with respect to copying of inventions, identifying symbols and creative slogans. As in other developing countries, India too showed for quick enforcement of intellectual property right protection laws. India has to comply being a member of WTO for such implementation of laws at least by 2005. India's IPR scene is no deterrent to foreign companies. These laws consist of distinct types of intangible properties.

II. ESSENTIAL ELEMENTS OF INTELLECTUAL PROPERTY RIGHTS

IPR is a broad term for covering –

1) Patents for inventions
2) Copyrights for material
3) Trademarks for broad identity and
4) Trade secrets.

In general these properties are termed as "Intellectual Property". Intellectual Property is an asset that can be bought or sold, licensed and exchanged. But of course unlike other properties, intellectual property is intangible; rather it cannot be identified by its specific parameters. These properties are protected on a national basis.

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A CONCEPTUAL FRAMEWORK ON GREEN MARKETING – A STUDY

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ABSTRACT
In today's business world environmental issues plays an important role in marketing. As resources are limited and human wants are unlimited, it is important for the marketers to utilize the resources efficiently without waste as well as to achieve the organization's objective. So green marketing is inevitable. All most all the governments around the world have concerned about green marketing activities that they have attempted to regulate them. For example, in the United States (US) the Federal Trade Commission and the National Association of Attorneys-General have developed extensive documents examining green marketing. There has been little attempt to academically examine environmental or green marketing. This article introduces the terms and concepts of green marketing, briefly discuss why going green is important and also examine some of the reason that organizations are adopting a green marketing philosophy. It also focuses some of the problems with green marketing.

Keywords: Green Marketing, Recyclable, Social Responsibility, Government Pressure.

INTRODUCTION
Many people believe that green marketing refers solely to the promotion or advertising of products with environmental characteristics. Generally terms like Phosphate Free, Recyclable, Refillable, Ozone Friendly, and Environmentally Friendly are some of the things consumers most often associate with green marketing. In general green marketing is a much broader concept, one that can be applied to consumer goods, industrial goods and even services. For example, around the world there are resorts that are beginning to promote themselves as "ecotourism" facilities, i.e., facilities that specialize in experiencing nature or operating in a fashion that minimizes their environmental impact .Thus green marketing incorporates a broad range of activities, including product modification, changes to the production process, packaging changes, as well as modifying advertising. But to define green marketing is not a simple task.

The terminology used in this area has varied, it includes: Green Marketing, Environmental Marketing and Ecological Marketing. While green marketing came into prominence in the late 1980s and early 1990s, it was first discussed much earlier. The American Marketing Association (AMA) held the first workshop on "Ecological Marketing" in 1975. The proceedings of this workshop resulted in one of the first books on green marketing entitled "Ecological Marketing". Green marketing is defined as "Green or Environmental Marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfaction of these needs and wants occurs, with minimal detrimental impact on the natural environment."

This definition incorporates much of the traditional components of the marketing definition, that is "All activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants" Therefore it ensures that the interests of the organization and all its consumers are protected, as voluntary exchange will not take place unless both the buyer and seller mutually benefit. The above definition also includes the protection of the natural environment, by attempting to minimize the detrimental impact this exchange has on the environment. This second point is important, for human consumption by its very nature is destructive to the natural environment. So green marketing should look at minimizing environmental harm, not necessarily eliminating it.

IMPORTANCE OF GREEN MARKETING
Man has limited resources on the earth, with which she/he must attempt to provide for the worlds' unlimited wants. There is extensive debate as to whether the earth is a resource at man's disposal.. In market societies where there is "freedom of choice", it has generally been accepted that individuals and organizations have the right to attempt to have their wants satisfied. As firms face limited natural resources, they must develop new or alternative ways of satisfying these unlimited wants. Ultimately green marketing looks at how marketing activities utilize these limited resources, while satisfying consumers wants, both of individuals and industry, as well as achieving the selling organization's objectives.

When looking through the literature there are several suggested reasons for firms increased use of Green Marketing. Five possible reasons are as follows:

Retail Sector in India: Driving Factors & Challenges.

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Abstract

The Indian retail industry has emerged as one of the most dynamic and fast-paced industries. The retail sector is expanding and modernizing rapidly in line with India's economic growth with the changing demographics and an increase in the quality of life of urban people. With a growing economy, improving income dynamics, rising awareness, and a youth-heavy customer base, India is well on its way to become one of the most prospective markets for the domestic and global retailers. In India the vast middle class and its almost untapped retail industry are the key attractive forces for global retail giants wanting to enter into newer markets, which in turn will help the India Retail Industry to grow faster.

The main objective of this paper is to analyze the opportunities available in Indian retail Industry. The present paper identifies the drivers which affect the growth of the Indian retail market and also highlights the challenges to be faced by the industry in the near future. The study describes the infrastructure, economic growth and changing demographics of consumers are the major drivers of organise d retail in India.

Key Words: *Retailing, organise d Retailing, Unorganised Retailing, Traditional Retail, Modern Retail.*

Introduction

The Indian retail industry has emerged as one of the most dynamic and fast-moving industries due to the entry of several new players in India. Retailing in India is one of the business enterprises of its economy and accounts for 14 to 15% of its GDP and around 8 per cent of the employment.

India is the world's fifth-largest global destination in the retail space. Retailing in India is gradually inching its way toward becoming the next boom industry. The whole concept of shopping has altered in terms of format and consumer buying behavior, ushering in a revolution in shopping in India. Modern retail has entered India as seen in sprawling shopping centers, multi-storied malls and huge complexes offer shopping, entertainment and food all under one roof.

The Indian retailing sector is at an inflexion point where the growth of organise d retailing and growth in the consumption by the Indian population is going to take a higher growth trajectory. The Indian population is witnessing a significant change in its demographics. A large young working population with median age of 24 years, nuclear families in urban areas, along with increasing working-women population and emerging opportunities in the services sector are going to be the key growth drivers of the retail sector in India. Standing on the threshold of a retail revolution and witnessing a fast changing retail landscape, India is all set to experience the phenomenon of global village. India is the "promised land" for global brands and Indian retailers A "Vibrant economy". India tops in the list of emerging market for global retailer and India's retail sector is expanding and modernizing rapidly in line with India's economic growth. The retail sector is also expected to have one of the highest incremental workforce requirements of 16 million people over the next seven years.

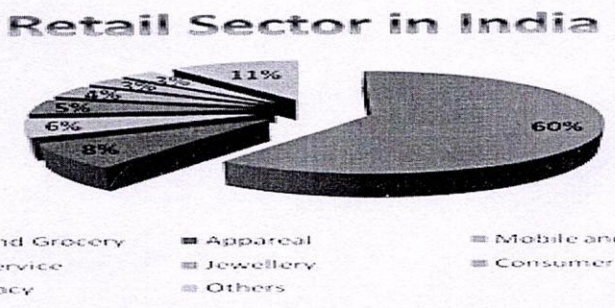
Retailing in India

Indian retail sector has seen many changes in the last decade and is regarded as one of the pillars of the economy. It accounts for 14-15 percent of the GDP and employs about 40 million people. The Indian retail market currently estimated at around US$490 Billion, is project to grow at a compound annual growth rate (CAGR) of 6 percent to reach US$865 Billion by 2023. India's retailing industry is essentially owner managed small shops account for more than 90%. In 2010, larger format convenience stores and super markets accounted for about 4% of the industry, and these were present only in large urban centers. The Indian retail industry is generally divided into organise d and unorganised retailing:

§**organise d retailing** - organise d retailing refers to trading activities undertaken by licensed retailers, those who have registered for sales tax, income tax, etc. These include corporate-backed hypermarkets and retail chains, and also privately-owned large retail business. Various estimates put the share of organise d retail to group to 20percent by 2020.

·**Unorganised retailing** - Unorganised retailing refers to the traditional forms of low-cost retailing, for example, local kirana shops, owner-operated general stores, paan/beedi shops, convenience stores, handcart and street vendors, etc. The growth of unorganised retail sector is pegged at 6percent.

Growth in Indian Retail



Speech Recognition System For Controlling The Robot

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Abstract:- Automatic speech recognition by machine has been a goal of a research for a long time, which concurrent the inter desciplines like mechanical, electronics and coputer engineering. Speech recognition is the process of converting an acoustic signal, captured by a microphone or a telephone, to a set of words. The recognized words can be the final results, as for applications such as commands & control, data entry, and document preparation. They can also serve as the input to further linguistic processing in order to achieve speech understanding. The speech recognition system has also been implemented on some particular devices. Some of them are personal computer (PC), digital signal processor, and another kind of single chip integrated circuit. In this paper we propose voice recognition to control robot using finger print comparison by Euclidean square distance, band pass filters and java technology.

Key words: Concurrent Engineering, Euclidean square distance, LPC, Voice recognition, Finger print.

1. INTRODUCTION:

1.1 Voice Recognition

The term "voice recognition" is sometimes used to refer as speech recognition where the recognition system is trained to a particular speaker, hence there is an element of speaker recognition, which attempts to identify the person speaking, to better recognize what is being said. Speech recognition is a broad term which means it can recognize almost anybody's speech - such as a call-centre system designed to recognize many voices. Voice recognition is a system trained to a particular user, where it recognizes their speech based on their unique vocal sound.

1.2 Mechatronics:

Mechatronics basically refers to mechanical electrical systems and is centred on mechanics, electronics, computing and control which, combined, make possible the generation of simpler, more economical, reliable and versatile systems. The term "mechatronics" was first assigned by Mr. Tetsuro Mori, a senior engineer of the Japanese company Yaskawa, in 1969.

1.3 Embedded Systems :

A combination of hardware and software which together form a component of a Conccurent systems. An embedded system is designed to run on its own without human intervention, and may be required to respond to events in real time.

Thermal Analysis of Pin-Fin Heat Exchangers

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Abstract- *Performance of various devices are based on heat transfer and widely used in the many industries, especially in power distribution sector (transformers), Automobile sector (engine cooling), Power Plant Sector, electric components, space industry etc. One of the useful methods to take away heat transfer from surface area of thermal device was extended surface or fins. Pin fin is suitable for numerous applications including heat transfer removal from air cooled I C engines, Electrical Small Transfers etc.*

This study presents the results of computational numerical analysis of air flow and heat transfer in a , considering two different morphology pin fins. A numerical study using Ansys fluent was conducted to find the optimum pin shape based on minimum pressure drop and maximizing the heat transfer across the Fin bodies. The results indicate that the drop shaped pin fins show improved results on the basis of heat transfer and pressure drop by comparing other fins. The reason behind the improvement in heat transfer by drop shape pin fin was increased wetted surface area and delay in thermal flow separation from drop shape pin fin. Therefore from the trapezoidal fin The maximum heat transfer is obtained.

I. HEAT TRANSFER

Heat transfer is the transition of thermal energy from a hotter mass to a cooler mass. When an object is at a different temperature than its surroundings or another object, transfer of thermal energy, also known as heat flow, or heat exchange, occurs in such a way that the body and the surroundings reach thermal equilibrium; this means that they are at the same temperature. Heat transfer always occurs from a higher-temperature object to a cooler-temperature one as described by the second law of thermodynamics or the Clausius statement. Where there is a temperature difference between objects in proximity, heat transfer between them can never be stopped; it can only be slowed.

MODES OF HEAT TRANSFER

There are three modes of Heat transfer, they are

- Conduction
- Convection
- Radiation

CONDUCTION

Conduction is the transfer of heat by direct contact of particles of matter. The transfer of energy could be primarily by elastic impact as in fluids or by free electron diffusion as predominant in metals or phonon vibration as predominant in insulators. In other words, heat is transferred by conduction when adjacent atoms vibrate against one another, or as electrons move from one atom to another. Conduction is greater in solids, where a network of relatively fixed spacial relationships between atoms helps to transfer energy between them by vibration.

Heat conduction is directly analogous to diffusion of particles into a fluid, in the situation where there are no fluid currents. This type of heat diffusion differs from mass diffusion in behavior, only in as much as it can occur in solids, whereas mass diffusion is mostly limited to fluids.

Metals (e.g. copper, platinum, gold, iron, etc.) are usually the best conductors of thermal energy. This is due to the way that metals are chemically bonded: metallic bonds (as opposed to covalent or ionic bonds) have free-moving electrons which are able to transfer thermal energy rapidly through the metal.

As density decreases so does conduction. Therefore, fluids (and especially gases) are less conductive. This is due to the large distance between atoms in a gas: fewer collisions between atoms means less conduction. Conductivity of gases increases with temperature. Conductivity increases with increasing pressure from vacuum up to a critical point that the density of the gas is such that molecules of the gas may be expected to collide with each other before they transfer heat from one surface to another. After this point in density, conductivity increases only slightly with increasing pressure and density.

To quantify the ease with which a particular medium conducts, engineers employ the thermal conductivity, also known as the conductivity constant or conduction coefficient,

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Adsorption Decolorization Technique of Textile Dyes from Textile Effluents

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Abstract

Water pollution is the one of the major problem faced by whole over the world.Textile effluents sewage directly enters water streams without any treatment. The color and the non-biodegradable nature of the spent dyebaths constitute serious environmental problems and various deleterious effects caused by them. In the present study to prepare activated carbon from Jack fruit waste then the prepared activated carbon is characterized by using different analytical techniques. The pore structures of the resulting carbon were analyzed using N_2 adsorption, and scanning electron microscope(SEM).Thermal stability of carbon was analyzed by thermogravimetric analysis (TGA) and temperature programmed desorption (TPD) studies. The nature of functional groups present on surface of activated carbons was analyzed by FTIR and XPS techniques. Finally the prepared activated carbon applied to decolorization of carcinogenic textile dyes from textile effluents by adsorption technique.

Key words: - Jack fruit waste, TGA, FTIR, XPS, textile dyes

1.1 Introduction:

Water is the most precious, limited natural resource on this biosphere which is essential to the survival of all living beings. Discharge of effluents from industrial processes adds hazardous chemicals to surface and ground water. Textile industries consume large volumes of water, dyes and auxiliary chemicals for processing of textiles. Due to incomplete exhaustion and washing operations, 10-20% of dyes were discharged into effluents [1]. Many of these dyes were toxic and carcinogenic thus affecting the aquatic biota and human health [2]. The world population was expected to be increased by 35% by 2050 [3]. This population growth will increase the production of clothes, which in turn, increases fresh water use. So conserving water and reducing water pollution will become a challenging and essential task for textile industries.

The aim of this study is to prepare activated carbon with good surface area and to introduce different surface functional groups onto the prepared carbon. As surface functional groups play a vital role in attracting different types of toxic substances and give feasibility for their adsorptive removal [4].

2.1 Material and Methods:

2.1.1 Material:

Jack fruit waste was collected from state horticulture mission, Paderu, Visakhapatnam, A.P., India. The rind and pulp waste of fruit was used as precursor for preparation of activated carbon. The waste was washed with hot distilled water to remove dirt and dehydrated at 110°C until constant weight was obtained. This dried waste was then cut into small pieces

2.1.2 Preparation of activated carbon:

Jack fruit wastewas mixed with K_2CO_3 solution in different impregnation ratio 1. Impregnation ratio (IR) was given by weight of K_2CO_3 (g) in solution/weight of Jack fruit waste in grams (g). This mixture was dehydrated in an oven overnight at 110°C. The impregnated Jack fruit waste was carbonized in uniform