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Association Rule Mining Algorithms through Vertical and Horizontal Data Layouts: Implementation and Performance Comparison

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Abstract:

Data mining is used to discover interesting and previously unknown patterns from datasets.Association rule mining is a popular and well researched method of data mining for discovering interesting relations between items in the databases. Finding frequent itemsets is an important task in data mining for extracting association rules. In this research, we have taken four association rule mining algorithms that use horizontal and vertical data formats for generation of frequent itemsets. we introduce a new association rule mining algorithm, intersect transaction algorithm that uses purely horizontal database layout and find the frequent itemsets by intersecting the transactions having a no. of items. We have also implemented Apriori and SplitMerge algorithms of association rule mining. Our Apriori implementation is the enhancement of the previous Apriori algorithm but uses the same property in finding the frequent itemsets as the previous Apriori algorithm uses. The Enhanced Apriori implementation is better in execution time as compared to the previous Apriori algorithm. The SplitMerge algorithms uses the split and merge technique to find the frequent itemsets. We have taken the Eclat (Equivalence CLASS transformation) algorithm that uses purely vertical data layout .I tested these algorithms on both real and synthetic datasets and then thoroughly investigate the strengths and weakness of these algorithms by carrying out several runtime experiments. It turns out that the runtime behavior of the algorithms is much more similar as to be expected

Keywords: Data Mining, Horizontal Layouts, vertical Layouts

I. INTRODUCTION

Data mining is an essential step in the process of knowledge discovery in databases (KDD), in which intelligent methods are applied in order to extract patterns[7].The knowledge discovered data mining have a variety of different types, the common patterns are: association mode, classification model, class model, sequence pattern and so on [8]. Association rule mining is the current hot.

II. ASSOCIATION RULE MINING

Association rule refers to the rules of certain association relationship between groups of objects in the database. It can be used to find the contact among the different commodities (terms) in the transaction database, and so that the behavior patterns of customer purchases will be found.

A. Association rule conception

Association rule mining can be described as following:
assuming I ={ $i_1,i_2,....i_n$} is n aggregates with different terms, then for a transaction database D , each element T in D is a set composed by some terms in I , $T \subseteq I$. The association rule is expressed as X $\Rightarrow$Y , hereinto, $X \subset I$, $Y \subset I$, and $X \cap Y = \Phi$. The association rule mining is to discover all condition implicative expression meeting the minimum degree of confidence and support users given, that is,

Review of flexible pavement for light aircraft

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Abstract

Pavement is the durable surface material laid down on an area intended to sustain vehicular or foot traffic, such as a road or walkway. In the past, gravel road surfaces, cobblestone and granite setts were extensively used, but these surfaces have mostly been replaced by asphalt or concrete laid on a compacted base course. Road surfaces are frequently marked to guide traffic. Flexible pavement are preferred over cement concrete roads as they have a great advantage that these can be strengthened and improved in stages with the growth of traffic and also their surfaces can be milled and recycled for rehabilitation. The flexible pavements are less expensive also with regard to initial investment and maintenance. Although Rigid pavement is expensive but have less maintenance and having good design period. The economic part is carried out for the design pavement of a section by using the result obtain by design method and their corresponding component layer thickness.

Keyword: Pavement, Flexible pavement, light aircraft

Introduction

Roads are the major channel of transportation for carrying goods and passengers. They play a significant role in improving the socio-economic standards of a region. Roads constitute the most important mode of communication in areas where railways have not developed much and form the basic infra structure for the development and economic growth of the country. The benefits from the investment in road sector are indirect, long-term and not immediately visible. Roads are important assets for any nation. However, merely creating these assets is not enough, it has to be planned carefully and a pavement which is not designed properly deteriorates fast. India is a large country having huge resource of materials. If these local materials are used properly, the cost of construction can be reduced.

Types of pavement: There are various type of pavements depending upon the materials used. A briefs description of all types is given here.

Review of shredded rubber into portland cement concrete

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Abstract:

The use of scrap tyre rubber in the preparation of concrete has been thought as an alternative disposal of such waste to protect the environment. In this study an attempt has been made to identify the various properties necessary for the design of concrete mix with the coarse tyre rubber chips as aggregate in a systematic manner. In the present experimental investigation, the M20 grade concrete has been chosen as the reference concrete specimen. Scrap tyre rubber chips, has been used as coarse aggregate with the replacement of conventional coarse aggregate Concrete is one of the most popular building materials. The construction industry is always increases its uses and applications. Therefore, it is required to find alternative materials to reduce the cost of concrete. On the other hand, Non-biodegradable waste i.e. water bottles, cool drink bottles and disposable glasses, shredded or crumbed rubber etc., is creating a lot of problems in the environment and its disposal becoming a great difficulty. The objective of this paper is to investigate the use of rubber pieces as coarse aggregate in the concrete. Concrete tested with varying percentages of rubber from 0 to 15% of normal aggregates. Compressive strength, of concrete is measured and comparative analysis is made.

Keywords: Rubberized concrete, Waste tyres, Shredded tyres.

Introduction

The production of tyres has increased proportionally to the production of automobiles, in Turkey. In the year 2000, total sales of tyres was around 126,000 tons of which 86,000 tons were sold directly to vehicle owners; hence, the assumption that approximately 90,000 tons of rubber tyres are replaced annually. In addition to locally manufactured tyres, imported tyres are also sold in the domestic market. Thus, based on these figures, it is estimated that the total volume of waste tyres needing disposal is approximately 120,000 tons annually.

EFFECT OF STONE DUST ON THE SPECIFIC PROPERTIES OF FRESH AND HARDENED CONCRETE

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ABSTRACT:

The main aim of this project is to study about stone dust's effect on few particular properties of concrete that is fresh and hardened (M25). In this we will be studying the experimental tests conducted for concrete's fresh and hardened properties for M25 grade and then we are comparing the results with the normal concrete. The waste material that is obtained from the crusher plants is stone dust. Stone dust is having great potential as we can use it as natural river sand's partial replacement in the concrete. We can use it not only in improving concrete's quality but also we can use it for conserving natural river sand for the coming generation.

For studying concrete's compressive strength and workability with the help of stone dust as fine aggregate's partial replacement ranging from 10-100% grade of design that was designed with the help of OPC, they have conducted experimental program in this. "Workability and Compressive strength were determined at different replacement level of fine aggregate viz a viz referral concrete and optimum replacement level was determined based on compressive strength".

KEY WORDS: - concrete, compressive strength, optimum, replacement, stone dust, workability.

INTRODUCTION:

The multipurpose material that is used for the construction of yard is stone dust. They suit a compacted layer of it with the yard or the surface of the passageway. For the sub-base that is in laying the paving blocks and slabs and also natural stone, it is a very good option or choice.

Review of helical reinforcement in column

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Abstract:

The present work explores the compatibility of normal with helical reinforcement as a whole which can be looked upon as an efficient replacement for normal reinforcement because of its ability to reinforce in all directions. The effectiveness was assessed by performing tests on the beams with respect to the cracking pattern, ductility and load defection diagrams. The advantage of using helical reinforcement can be observed significantly. Therefore, reinforced beam with helical reinforcement has higher ultimate load-bearing capacity than normally reinforced beam. Hence it can be used in places where horizontal loads have higher significance.

**Keywords:** RCC beams, RCC columns, Spiral reinforcement

Introduction

Reinforced concrete, as a composite material, has occupied a special place in the modern construction of different types of structures due to its several advantages. Due to its flexibility in form and superiority in performance, it has replaced, to a large extent, the earlier materials like stone, timber and steel. Further, architect's scope and imaginations have widened to a great extent due to its mouldability and monolithicity. Thus, it has helped the architects and engineers to build several attractive shell forms and other curved structures. However, its role in several straight line structural forms like multistoried frames, bridges, foundations etc. is enormous.

Column: Column is a vertical compression member whose unsupported length l shall not exceed sixty times of b (least lateral dimension), if restrained at the two ends. Further, its unsupported length of a cantilever column shall not exceed $100b2/D$, where D is the larger lateral dimension which is also restricted up to four times of b (vide cl. 25.3 of IS 456).

Classification of Columns Based on Types of Reinforcement

Based on the types of reinforcement, the reinforced concrete columns are classified into three groups:
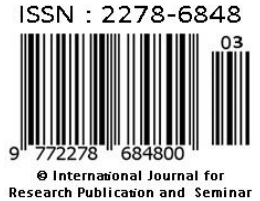
Review of polyvinyl alcohol (PVA) fibre in cementitious composites: properties and effect

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Abstract: The effect of uncoated polyvinyl alcohol (PVA) fibre addition on dynamic properties of fibre reinforced concrete (FRC) has been investigated in the current study. PVA fibres of two geometric lengths (6 and 12 mm) with aspect ratio of 428 and 857, respectively, were utilised. Fly ash was also used as partial replacement of Portland cement in all mixes. Based on total concrete volume, two fibre fractions of 0.25% and 0.5% were evaluated for their effect on fundamental frequency, dynamic modulus of elasticity and damping ratio of FRC. 28-Day static mechanical properties are also measured. From the results, it can be stated that although PVA fibre addition in low volume fractions used in this study significantly enhance the mechanical properties of FRC, it has no considerable effect on concrete material damping characteristics.

Keyword: Polyvinyl alcohol, ECC, Fibre reinforced concrete

Introduction

The development of polyvinyl alcohol fibre took place in 1939 and is accredited to Dr. Sakuradas and assisting research group of Kyoto Imperial University of Japan. In 1950, Kuraray Corp began to commercially manufacture and sell PVA fibre as the first Japanese organic fibre (Horikoshi, Ogawa, Saito & Hoshiro). The production of PVA is via polymerization of vinyl acetate to polyvinyl acetate (PVAc), pursued by hydrolysis of PVAc to PVA. The chemical structure of PVA is reasonably simple with a pendant hydroxyl group.

To date PVA fibre has multiple uses which include fishing nets, seaweed farming nets, ropes, hoses, belts, tire codes, paper making felts and more. In regards to a cementitious matrix, PVA fibres impose good flexural strength to the composite. This is due to its excellent interfacial bond with the matrix. Refer to Figure 4 for PVA in the form of fibres for use in fibre

Effect of using high concrete grade at beam-column junction: A Review

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Abstract

A joint or junction is basically the portion of the beam into the column and is the zone of complex stress concentrations and is prone to failure via crushing of concrete. It is not necessary that failure would only occur because of crushing of concrete at joint but there may also be other structural failures related to reinforcement design and detailing. In this project an attempt has been made to study the behavior of beam-column junction with respect to the behavior of concrete at joint and an attempt has been made to improve the efficiency of joint by adopting measures to prevent crushing of concrete at joint.

Keyword: Beam column, concrete,

Introduction

A beam-column joint is a very critical zone in reinforced concrete framed structure where the elements intersect in all three directions. Joints ensure continuity of a structure and transfer forces that are present at the ends of the members. In reinforced concrete structures, failure in a beam often occurs at the beam-column joint making the joint one of the most critical sections of the structure. Sudden change in geometry and complexity of stress distribution at joint are the reasons for their critical behavior .In early days, the design of joints in reinforced concrete structures was generally limited to satisfying anchorage requirements. In succeeding years, the behavior of joints was found to be dependent on a number of factors related with their geometry; amount and detailing of reinforcement, concrete strength and loading pattern.

In developing countries, the increasing reliance of employment on economic and social considerations is one of the reasons that lead to increasing rural-to-urban migration which in turn lead to increased demand on land use in large cities like Addis Ababa. Following this, more high rise structures are being constructed now than in the past. On the other hand, for the developed countries, the engineering challenge where by the two targets of boasting the longest bridge and the highest building have become serious considerations in the conceptual design of landmark

ORIGINAL PAPER

Classification and Comparative Evaluation of Community Detection Algorithms

Ruchi Mittal[1] · M. P. S. Bhatia[1]

Abstract

The area of social networks has kept growing and exhibits multiple types of interaction among entities. This arrangement of nodes leads to the many kinds of studies in the social network. Community detection is one of the accessible areas in social networks which developed a significant interest among researchers. A community is defined as a deeply linked group of entities. In this paper, we target to present a survey on various types of communities and community detection algorithms in social networks. We also classify and evaluate the different community detection algorithms based on the base approach. Depending on the application and usage, this classification eases researchers to find a suitable community detection method for their work. We also present a comparative evaluation of many community detection algorithms on some popular social networks and demonstrate the performance of each of the algorithm.

1 Introduction

A system formed by a huge count of highly connected nodes is called a vast network [1–3]. For example, an online social network such as Twitter has millions of users in which a user follows one or more users. A network formed by connecting the followers and followees in the system is called an extensive network. Similarly, a citation network such as dblp has millions of authors, which build an extensive network based on their collaborative work.

Devising methods or algorithms used for investigating and evaluating the structure of social networks is called Social Network Analysis (SNA) [4]. SNA is used to understand the relationship between people and groups in a social network. Also, helps us in understanding how these links arise and what are the factors involved in a relationship. For example, on Twitter, the structure of the follower-followee network varies over time concerning the ongoing trends. The study of the changes in the network is a part of SNA.

The general classifications of social network analysis are of two types: egocentric analysis and sociocentric analysis

[5]. The egocentric analysis focuses on the individuals, and it leads to the study of individual node characteristics. On the other hand, the sociocentric analysis focuses on groups and the relationship between the people of the group. It enables the study of community structure. A community is a close knitted group of entities to analyze the behavior of complex networks and to minimize the complexity of the task [6, 7]. The concept of community plays an essential role in social network analysis and comprises various definitions depending on the type of graph and application. In general, a community has a subset of entities of a graph where vertex–vertex relationships are dense. Figure 1 shows a sample structure of Facebook network along with communities. Here, each color represents different communities as they exhibit stable connections inside and sparse association outside.

Identifying essential communities is an active area of research and is widely used for understanding the behaviour of entities in an extensive network [8]. For example, in a mobile phone network, community analysis is used to uncover the success or failure of a mobile plan among users. In a collaboration network [9], one can find out the latest collaborative research area using communities.

Network organization plays a vital role in community detection. Depending on the network organization, one can discover communities accordingly. Majorly vast network is organized in multiple ways like hierarchical organization, evolutionary organization, and modular organization [10].

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STUDY OF BEAM COLUMN JOINTS

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ABSTRACT:

A beam-column joint has to transfer the shear forces, bending moments and other related structural response parameters efficiently. The present paper aims at studying the behavior of beam-column junction based on variations in concrete grade at junction. To increase the load carrying capacity of a joint, a higher grade of concrete is used at a joint and also up to 1.5D in the direction of beam from face of column, to shift or relocate the plastic hinge from the interface towards the beam.

The different specimens were prepared in a T-shaped mould by changing the grade of concrete at beam-column joint and these samples were tested after 7 and 28 days. The use of M20 or M25 grade of concrete at joint and up to 1.5D (D is the depth of beam) of length of beam (M15 grade of concrete in rest of mould) increases the load carrying capacity approximately to about 20% when compared with M20 or M25 grade of concrete at junction and M15 grade in the remaining mould. The most important finding is that the use of higher grade of concrete at a joint and up to 1.5D of length of beam, shifts the failure away from the beam-column interface Thus, a beam hinging mechanism is achieved which is a ductile type of failure compared to beam-column brittle interface failure and there is approximately 15-30% increase in load carrying capacity, in comparison with higher concrete grade only at a joint core. This is a simple and efficient method of preventing the beam-column joint failure.

Key Words: Beam-Column Joint, Brittle Failure, Concrete Grade, Load Carrying Capacity, Strength

DEVELOPMENT OF ULTRA-HIGH PERFORMANCE FIBRE REINFORCED DUCTILE CONCRETE

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ABSTRACT:

Concrete is one of the flexible materials which are commonly used in the construction work which is transform into any virtual form. The amazing flexible quality makes it valuable. The aesthetics of modern & ever growing architecture for the development of geometries & material is done in the suit of engineering design. It has fragile quality which is the major ruin of the concrete. This fragile nature of the concrete is due to the high budding of solitary crack which may cause to unmanageable breakdown of the sample.

With the help of FRC (fiber reinforce concrete), property of concrete has been improved through the addition of short fibers discrete into the concrete mix. In recent period researchers are generally research on the PVA fibre which is one of the evolving section of FRC. High tensile property gives the power to concrete as it has familiar young modulus, efficient pricing and little diameters (Yang, Zhou, Xing & Xiang 2013). When the cementitious matrix has been put into the pressure, cracking of cementitious mix is started at the point of dispersed short fibre in filling the gap of matrix and reduce tensile pressure through making bridge between it.

KEY WORDS: Fiber, Reinforced, Ductile, Concrete, Mixture, Performance.

INTRODUCTION: The performance, durability and life of the structure can be improved through the Ultra High-Performance Fiber Reinforced Concrete (UHPFRC). In the cenentitious composists three kind of development has been found which plays a vital part in the   market such as it improve the ductility, increase power and enhance efficiency. it can be possible

Study of the effect of addition of shredded rubber into the Portland cement concrete at different replacement levels

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Abstract :

The use of scrap tyre rubber in the preparation of concrete has been thought as an alternative disposal of such waste to protect the environment. In this study an attempt has been made to identify the various properties necessary for the design of concrete mix with the coarse tyre rubber chips as aggregate in a systematic manner. Scrap tyre rubber chips, has been used as coarse aggregate with the replacement of conventional coarse aggregate Concrete is one of the most popular building materials. The construction industry is always increases its uses and applications.

Therefore, it is required to find alternative materials to reduce the cost of concrete. On the other hand, Non-biodegradable waste i.e. water bottles, cool drink bottles and disposable glasses, shredded or crumbed rubber etc., is creating a lot of problems in the environment and its disposal becoming a great difficulty. The objective of this study is to investigate the use of rubber pieces as coarse aggregate in the concrete. Compressive strength, of concrete is measured and comparative analysis is made.

Key Words: Rubberized concrete, Waste tyres, Shredded tyres, Recycled waste materials, Concrete, Rubber, Environment, Sustainability

INTRODUCTION: There is a major issue for all the 3rd world countries and that is worn tyre's management. As we know that the number of vehicles that is increasing, and with that there are few countries which are presently known for development of the industrial area and those are surely a big environmental issue because of absence of a plan that is adequate to eliminate the waste.

Study of DNA HELICAL REINFORCEMENT

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ABSTRACT:

To make any structure column is a crucial element. Supporting the slabs is the key task of the columns. Beam columns are provide the support through supporting slabs & walls. If the columns are failed to provide support than the build structure will collapse badly. So, to provide good support to the structure proper designing of the column is necessary. Columns which show more ductile behaviour do not show a catastrophic failure and give warning prior to impending failure. The ductility of reinforced concrete columns is also important in evaluating their aseismicity behaviour, because the column with the excellent ductile behaviour would be capable of absorbing and dissipating seismic energy.

KEYWORDS: Helical, reinforcement, concrete, mixture, cement, column

INTRODUCTION: In the structural engineering & architecture column or pillar is the essential component that spreads the weight of the framework above to other structural components through compression procedure. Thus column is a density component. A large round support with a base or capital or pedestal is considered in the column which generally made of stone or any other material. A post is small metal or wooden support and it also supports through the other non-round section or rectangular are which is commonly known as piers. Piers may also be circular as in bridges. The columns are designed to restrict the lateral power such as heavy wind and earthquake. The upper parts of walls and ceilings rest on the columns which generally build to support arches and beams. Column used in architecture has some decorative & proportional characteristics which is the key component of structure design. Sometimes columns are used for decorative purpose not for supporting purpose or providing strength to the structure.

Effect of stone dust on the specific properties of fresh and Hardened Concrete: A review

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Abstract

This project is aimed at studying the effect of stone dust on the specific properties of fresh and hardened concrete (M25). The experimental tests for fresh and hardened properties of concrete for M25 grade are studied and the results are compared with normal concrete. - Stone dust is a waste material obtained from crusher plants. It has potential to be used as partial replacement of natural river sand in concrete. Use of stone dust in concrete not only improves the quality of concrete but also conserve the natural river sand for future generations.

Keywords: Concrete, Compressive strength, Replacement, Stone dust.

Introduction

Stone dust is a waste material and is generated during blasting and aggregate crushing. The damping of this waste material is also a big problem by using these waste materials in construction work it is very easy to dispose these waste materials. These wastes produce different type of pollutions like air pollution, water pollution, land pollution, etc. Due to these pollutions various types of diseases are produced to the life on the earth. These pollutions are increasing day-by-day due to this waste production so the disposal of these wastes is an serious issue and also the matter of concern.

Concrete is a composite material made of cement, fine aggregate, coarse aggregate and water. At present construction industry is growing exponentially due to several other factors besides increasing developmental activities. This results in huge demand of construction materials. Concrete is most widely used construction material. Major components of concrete are aggregates which are usually available in natural form. Fine Aggregate used in concrete is usually river sand available locally or at nearby location. The naturally available source of fine aggregate is limited as such conservation of the same is inevitable. Going for alternative and supplementary material which can be used as partial or full replacement of conventional material

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Smart Homes Based on Blockchain for Security

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Abstract:
Internet of Things (IoT) security and privacy stay a significant challenge, principally because of the large scale and distributed nature of IoT networks. Blockchain-based approaches offer localised security and privacy, nevertheless they involve important energy, delay, and process overhead that's not appropriate for many resource unnatural IoT devices. In our previous work, we have a tendency to bestowed a light-weight representation of a before Christ notably back-geared to be used in IoT by eliminating the Proof of labor (POW) and therefore the idea of coins. Our approach was exemplified during a good home setting and consists of 3 main tiers namely: cloud storage, overlay, and good home. during this paper we have a tendency to withdraw deeper and description the varied core parts and functions of the good home tier. every good house is equipped with associate invariably on-line, high resource device, called "miner" that's to blame for handling all communication among and external to the house. The mineworker conjointly preserves a personal and secure before Christ, used for dominant and auditing communications. we have a tendency to show that our projected BC-based good home framework is secure by completely analysing its security with regard to the elemental security goals of confidentiality, integrity, and accessibility. Finally, we have a tendency to gift simulation results to focus on that the overheads (in terms of traffic, interval and energy consumption) introduced by our approach ar insignificant relative to its security and privacy gains.

I. INTRODUCTION

THE TERM "Internet of Things" (IoT) was 1st utilised in 1999 by choreographer [1]. In 2015, i.e., concerning twenty years once the term was coined, the IEEE IoT Initiative discharged a document whose main goal was to determine a baseline definition of the IoT, within the context of applications starting from tiny, localised systems unnatural to a selected location, to massive international systems composed of complicated sub-systems that ar geographically distributed [2]. during this document, we are able to notice an outline of the IoT's subject area needs, its enabling technologies, likewise as a concise definition of the IoT as associate "application domain that integrates totally different technological and social fields". At the core of it, the IoT consists of networked objects that sense and gather knowledge from their surroundings, that is then wont to perform machine-driven functions to help human users. The IoT continues to be steady growing worldwide, because of increasing web and wire- less access, the introduction of wearable devices, the falling costs of embedded computers, the progress of storage technology and cloud computing [3]. Today, the IoT attracts a mess of analysis and industrial interests. With every pass- ing day, smaller and smarter devices ar being enforced in multiple IoT domains, as well as housing, exactness agri- culture, infrastructure observation, personal aid, and autonomous vehicles simply to call a number of.

INTRODUCTION

1. MAIN COMPONENTS TO SETUP A SMART HOME

Transactions
LOCAL BLOCK CHAIN
Home miner
Local Storage

2.OVERVIEW OF BC-BASED IOT SMART HOMES

Initialisation

Transaction Handling

3. EVALUATION AND ANALYSIS

Security Analysis
Performance Evaluation

CONCLUSION

1. MAIN COMPONENTS TO SET UP SMART HOME

- The main components used for setting up of smart home are discussed as follows:

A. Transactions:

Communications between native devices or overlay nodes ar referred to as transactions. There ar totally different transactions within the BC-based sensible home every designed for a selected perform. Store dealing is generated by devices to store knowledge. associate degree access dealing is generated by the house owner to access the cloud storage. A monitor dealing is generated by the house owner to sporadically observance a tool info. Adding a brand new device to the sensible house is done via a genesis dealing and a tool is take away via a remove dealing. All of the once mentioned transactions use a shared key to secure the communication. light-weight hashing is utilised to notice any amendment in transactions content throughout transmission. All transactions to or from the sensible home ar hold on in a very native personal BlockChain (BC).

B. LOCAL BLOCK CHAIN:

In every sensible home, there's an area personal B.C. that keeps track of transactions and features a policy header to enforce users' policy for incoming and outgoing transactions. ranging from the genesis dealing, every device's transactions ar enchained along as associate.

Automated Classification Of White Blood Cell

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Abstract

To check the patient's health we have to identify the characteristics of the White Blood cell(WBC). we can identify the malignant disorders of White blood cells. With the help of Computer based Classification and segmentation of WBC we can easily diagnose diseases like leukemia, cancer, AIDs, diseases related to the immune system . By using neural networks we can classify and segment the smear images of WBC for the appropriate reports. The classification can be done by NN and the characteristics can be identified by the watershed and threshold process.

1. Introduction

Blood is a combination of plasma and other three composition cells are Red blood cell,white blood cell and platelets cells. Blood cells are formed inside the bone marrow which is the centre of the bone. The origin of all blood is the stem cells blood after releasing from the stem cell the blood circulates in the entire body. which helps to perform individual functions of the body. we can determine the blood cell on the basis of shape, color and texture

blood composition cells are Red blood cells,white blood cells and platelets cells. white blood cells divided into five classes (1) neutrophils (2) lymphocytes (3) eosinophils (4) basophils and (5) monocytes cells.

Manually counting of WBC is a difficult task and takes most of the time for appropriate reports of the patient's health. To reduce human errors and time we need to automate processes for appropriate reports of the patients. so it's provide efficient diagnosis process for the patients and make easier for hetalogists

1.1 composition of cells

1. red blood cell
2. platelets
3. white blood cell
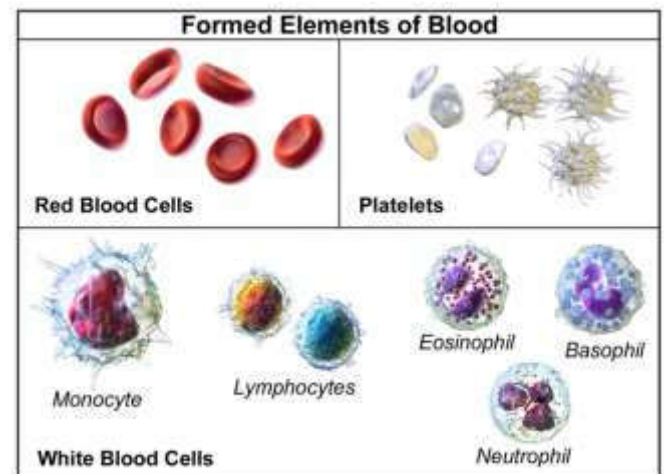
1.2 Principles and Methods

1. Segmentation
    a. Image gathering and preprocessing
    b. Segmentation and thresholding
    c. Watershed
2. Feature Extraction
    a. Morphological based features
    b. Discrete wavelet transform based features
3. Classification
    a. Classification using NN

1.3 Image segmentation

Segmentation for tracking WBC cells from blood cells. but, it is complex because there are stains on the cell images, same color of the cell, overlapping of cells. all the composition of lots cells have lots of similarities so it is difficult to identify the WBC from the blood cells.

Hybrid Crowd Cloud Routing Protocol For Wireless Sensor Networks

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Abstract

We proposed a hybrid cloud crowd routing algorithm which is dependent on astute processing to improve the information transmission proficiency, unwavering quality, and decrease steering overhead in remote sensor systems. In light of the examination of the interest of huge information preparing in remote sensor organize, the information examination and handling stage for remote sensor organize are structured dependent on the mix with the distributed computing. The cloud stage incorporates the primary hubs, the hubs, and the center hubs. There are the motor and the drive between the remote sensor organize also, the cloud server. Furthermore, focusing on the issue of information transmission in the cloud stage, we plan an entrepreneurial processing model which is appropriate for remote sensor systems to limit the heaviness of directing the board and system overhead. At that point, we structure an artful figuring model to ensure the information transmission plan of the cloud stage. At long last, by disposing of the elements that may cause the connection unsteadiness, the swarm cloud steering convention is proposed. The trial results show that the proposed swarm cloud directing convention has the elements of continuous and unwavering quality and decreases the expense of directing solicitation.
Keywords: Crowd steering, Cloud, Opportunistic registering, Fusion, Wireless sensor systems

1. Introduction

Remote Sensor Networks (WSNs) allude to a sort of systems comprising of countless such free sensor hubs with implanted processors, sensors, and remote transmitters in a self-association way, which can understand information assortment, remote correspondence, information capacity and handling and coordinate together to reach some significant level purposes, for example, reconnaissance, following what's more, checking. By and by, it is generally utilized in military, national security, natural checking, traffic the executives, medicinal services, producing, and numerous different fields [1, 2].

WSNs serve to gather information from observed region sending to base station so as to dissect. The sorted out structure of these sensor hubs incorporates level structure and various leveled structure. Various leveled structure is actualized by bunching sensor hubs and the engineering of bunched remote sensor organize is appeared in Fig. 1. It structures two various types of hubs: group heads and group individuals. They work agreeably, which can convey vitality dispersal equitably all through the sensors, diminish by and large vitality utilization, improve the versatility what's more, power of systems [3]. Nonetheless, because of its open normal for workplaces (typically sent in unmanned reconnaissance or unfriendly regions) and the method for remote correspondence and self-association, WSNs are inclined to abrupt mishaps and experience the ill effects of assaults of malignant hubs, which lead to systems harmed. In nonattendance of sufficient security, arrangement of numerous uses of sensor systems could be abridged. Such a significant number of researchers have given close consideration to WSNs security and inquired about on it [4–6]. Like the conventional systems, the security of WSNs is considered about system accessibility, secrecy, uprightness, verification, etc.

An explained investigation of weld development in multilayer ultrasonic welding and the effect of weld pools on propagation mechanism

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ABSTRACT

Solid-state welding is a group of welding processes that produce sound joints at temperatures essentially below the melting point of the parent materials or without bulk melting of the parent materials. The joints produced by solid-state processes are usually free of various solidification defects such as gas porosity, hot cracking, and non-metallic inclusions, which may otherwise be present during fusion welding processes. No filler metals, flux, or shielding gas is required during solid-state welding process. The metal being joined can have mechanical properties similar to or even better than that of their parent metals due to the absence of defects and heat-affected zone in most of these processes. Unlike various fusion welding processes which are well known, solid-state welding is usually not well acquainted by industrial engineers. The purpose of this research is to determine the effect of various weld and machine parameters on ultrasonic weld strength. In this we are going to use thermosetting material named epoxy which is one of the low density polymers. By considering three main parameters that is amplitude, pressure and weld time we are going to conduct the experiment.

Keywords:.Welding Processes, Solid-State Welding, Chemical Compatibility, Thermal Expansion, Amplitude, Weld Time, Pressure, Tensile Strength.

I. INTRODUCTION

During ultrasonic welding of sheet metal, normal and shear forces act on the parts to be welded and the weld interface. These forces are a result of the ultrasonic vibrations of the tool, pressed onto the parts to be welded. Furthermore they determine the weld quality and the power that is needed to produce the weld. The main goal in this study is to measure and calculate the tangential forces during ultrasonic metal welding that act on the parts and the weld interface and correlate them to weld quality. In this study a mechanics based model was developed which included a model for the temperature generation during welding and its effect on the mechanical material properties. This model was then used to calculate the interface forces during welding. The model results were in good agreement with the experimental results, which included the measured shear force during welding. In the experiments the influence of part dimensions, friction coefficient, normal force and vibration amplitude on weld quality and sonotrode adhesion were examined. The presented model is capable of predicting and explaining unfavorable welding conditions, therefore making it possible to predetermine weld locations on larger parts or what

ROLE-BASED ACCESS CONTROL APPROACH FOR APPLICATION LEVEL SECURITY AGAINST INSIDER ATTACKS

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Insider attacks are a major issue now days. It is a worldwide concern. In a brief view, "insider" is a person who is engaged by a business and therefore has the chance to have a knowledge of some internal news or can access secret information or data. Compare with outsiders, insiders have better knowledge about how their system works and that is why insider attack may cause more hardazous than outsider attack. Bank security is important for a following of reasons; one of those reasons includes providing secure banking for customers and protecting the bank from unauthourized person. Intrusion detection systems have the task of observing the usage of application based systems to detect any manifestation of uncertain states. They find out attempts and active misuse either by authorized users of the information systems or by external parties to exploit their privileges or security vulnerabilities.

Access control can confined the information access to users. In order to grant the access of multiple user a role based access control approach was implemented. Instead of granting permission to each and every user a roles are defined based on the task positions a user has in an organization. Permission are granted to roles and roles are assigned to the user to perform certain task in the organization and access certain application. It is a way of restricted user to access only those information who have a previlleged.

ABBREVIATIONS

IDS -Intrusion Detection System, IPS.Intrusion Prevention System, IDPS-Intrusion Detection and Prevention System, IDR -Intrusion Detection and Response, NIDS -Network-based intrusion detection systems, HIDS-Host- based intrusion detection systems, RBAC-Role Based Access Control, ACL -Access Control List, UA-User Agent/Assignment, PA-Permission Assignment, RH-Role Hierarchy, OPS-Operations, AUA-Administrative User Assignment, AR-Administrative Role, ARH-Administrative Role Hierarchy, AP-Administrative Privilege, APA-Administrative Privilege Assignment, OTSK-One Time Security Key.

INTRODUCTION

1.1 About IDS

Now a days Data represent an important resource for companies and organizations. Organizations take great care at controlling access to these data with respect to both insider and outsiders because some of the data of an organizations are worth millions of dollars. Security of data is also crucial when addressing issues related to privacy of data referring to individuals; companies and organizations supervising such data need to provide strong guarantees about the confidentiality of these data.

Real Time Bus Monitoring System

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***Abstract** – In this days the daily operation of a bus monitoring system, the travelling of vehicles is affected by some conditions such as traffic jam, unexpected late departure and arrival, and irregular in passenger demand, irregular vehicle departure times, and many other incidents. The real time bus tracking system is designed to serve as a tracking system for the bus passengers using a data fetched by bus conductor. This paper mainly focuses on a system that helps passengers and bus depot administration, to locate the current location of the buses and estimated arrival time of the busses to their next bus stop. The complete system is worked through a single mobile app. The bus depot administrator will keep the complete travelling history of the busses. This paper discusses the real time bus monitoring in India and explores the difference between the real time bus monitoring and other bus monitoring.*

***Keywords** – real time tracking, bus monitoring, expected arrival time of the bus.*

I. INTRODUCTION

In today's environment, the time is very important and everybody knows how transportation waste our most of the time in India, and therefore the real time bus monitoring system is introduced. Many travelers are often late to work; studies are additionally late for their classes since they doesn't choose to sit tight for the transport or rather than that basically take another method of transport. Indicating a normal appearance time data through easy to understand interfaces, for example, cell phone gadget could make the open vehicle framework exceptionally simple The ongoing transport observing framework is essentially utilizes an information which is brought by transport conductor. Essentially the transport conductor login in the framework, select their bus station and enters the takeoff time of the transport. The areas appearance and takeoff times are put away in the database server and afterward it is recovered on the traveler's screen, when the traveler scan for their flight stop and he will get the assessed appearance time of the following approaching transports.

These innovations can be applied on the present open vehicle frameworks, particularly transports, which can't run on the given timetables because of numerous reasons like congested driving conditions, breakdowns, motor disappointment and some more. At the point when the right data identified with next approaching transports to their takeoff transport stops are given to travelers by any medium, at that point traveler can invest their energy in any work and arrive at the bus station not long before a couple of moments minutes of the transport shows up, or take different methods of transport if the transport is late or not accessible. They can even arrangement their excursions some time before they really attempt them.

This will make the transport framework serious and easy to use for travelers. The utilization of other private vehicle transports is diminished when most extreme individuals utilizes open vehicle transports, due to that lessens traffic and contamination.

1. Related Work

A large amount of money is wasted on IT-based hardware applications such as real time, incoming busses on stop displays on public transport. There are numerous explores done on vehicle tracking system. Each new research utilizes some equipment which will be introduced on the transports, however what happens when this equipment got harm because of substantial downpour, violent wind or because of sun beams. In every one of these cases they won't work accurately. All the equipment based application require enormous measure of assets for procurement, establishment and furthermore require auspicious support. Furthermore, in this way, all these equipment based application isn't gainful for open transport framework.

And many other technologies uses GPRS technologies which also faces many problems such as they doesn't give the actual situation information when the bus fails because of tyre puncture or engine problem.

All the hardware based system is applicable in the some targeted areas of maximum 5 meters to 15 meters and therefore the bus information out off the range will not be predicted very well through all these tracking devices which are installed on the roof of busses. And therefore, there is a need to find such application which is totally independent of any hardware.

II. MOTIVATION

Bus passengers many a time faces many problems in getting the bus position or they will wait for a long time at

Energy Efficiency Improvement for Wireless Sensor Network in Real time IoT applications

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Abstract

In the WSN, the remote vitality movement is a requesting innovation for the vitality challenges as of late. The principal weakness of introduction is constrained span on the grounds that WSN contains just limited battery vitality at a terminal. Consequently, we foreseen group related remote vitality move in this record. The first goal of the strategy is to expand the length of the sensor arrange through charging by the assistance of this remote force move innovation. In this paper, the scholar propose the Energy Efficient improved algorithm in which one terminal in the system is diminishing its vitality, at that point the CH will send charge solicitation and course ID to the MCV. Thereafter, the MCV perceive the terminal by methods for the demanding course and set up to charge the terminal. The generation outcomes delineate that the system lifetime of our foreseen technique is improved than possible strategy.

Keywords*: WSN, IoT, Energy Efficient, Routing, Cluster Head*

1. Introduction

The wireless sensor network (WSN) has wide scope of applications in the field of reconnaissance, observing, buyer hardware, remote checking of patients, and so forth [1– 5]. The functionalities of sensor organization are expanding day by day with headways in advancements. The size of the sensor terminal is diminishing, with the expansion in applications. In any case, scaling down of the sensor terminal impacts the size of the battery [6–9]. The capacity limit of the battery is diminished as the size of the sensor terminal is decreased. The sensor organization comprises of gathering of sensor terminals which are sent in the district of intrigue. The terminals are sent in the remote condition, which is barely feasible for the people to supplant the terminal. The limit of the battery is restricted because of the size of the sensor terminal. In this manner, the vitality the executives with the accessible assets has become the significant limitation of sensor arrange [10].

The lifetime of the sensor organization relies upon the lifetime of every individual terminals. Every sensor terminal plays a significant job in expanding the survivability of the system. The bunching system in sensor organization empowers effective transmission of data from end terminals to the sink. The determination of CH lessens the clog due to information transmission from all terminals. Numerous vitality proficient bunching and steering conventions are accessible which gather in improving the lifetime by thinking about the remaining vitality of the battery. However, lingering vitality of the battery is noteworthy for steering, numerous different variables like number of bits transmitted, must be considered for effective directing. The vitality productive directing should bolster both lifetime and increment in throughput of the system. The expansion in lifetime and throughput can be accomplished by choosing appropriate CH and stacking terminals dependent on the remaining vitality of the battery. The expansion in size of the battery expands the size of the terminal and the expansion in size of the terminal

OBJECT DETECTION AND TRACKING TECHNIQUES OF MOVING OBJECT

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ABSTRACT

Moving article discovery and following are the extra extensive and trying out venture in video remark and PC imaginative and prescient packages. Item location is the approach of finding the non-stationary elements within the photo groupings. Location is the preliminary move towards following the transferring object inside the video. Item portrayal is the following good sized develop to follow. Following is the strategy for distinguishing, the situation of the moving article within the video. Recognizing the position is drastically extra testing errand at that point figuring out the moving item in a video. Article following is carried out in various applications like in robot imaginative and prescient, watching the traffic, Video remark, Video in-painting and Simulation. Here we're going to display a brief survey of numerous object identification, object arrangement and article following calculations accessible. Article following is the way towards locating shifting object or specific objects in association of edges. Item following is largely a difficult issue. Challenges in following of an article may emerge because of sudden adjustments in condition, movement of item, commotion and so on. To triumph over such issues distinct following calculations were proposed. This paper presents one-of-a-kind strategies recognized with object region and tracking..The objective of this paper is to introduce a have a look at of those methods. Watchword: Object location, Object portrayal, Object following, Performance Analysis.

Keywords: Video commentary, Simulation

I. INTRODUCTION

Video exam is an all of the extra checking out errand in today"s condition. Following the shifting article has pulled in severa analysts within the discipline of PC vision and picture preparing. Video reconnaissance is the manner towards looking the conduct, occasions and other fundamental proof, on the whole of the individuals for supervision and making sure them. Reconnaissance is mostly used by governments for social event data, for studying and forestalling the wrongdoing. Video reconnaissance movement may be partitioned into 3 sorts in particular. Manual video commentary, Semi-self-sufficient reconnaissance and Fully independent statement. In guide statement human is responsible for breaking down the substance of the video.

Semiautonomous reconnaissance framework includes video dealing with by framework with the cooperation of the human whilst vital. Completely impartial observation framework, the framework will play out every errand, for example, identity of movement, following and so on., with out the need of human connection. Mechanized checking method otherwise referred to as the Intelligence Visual Surveillance (IVS) consists of the exam and elucidation of items exercises, however object identification and following to perceive the visual sports of the scene. The principle challenge of IVS contains of huge territory remark control and scene elucidation. Article following ought to arrangement with a few light adjustments and truely understood difficulties. For the most component video research is ordered into 3 vital stages: shifting substance distinguishing, locating the direction of article starting with one casing then onto the following edge and examination of detail tracks to understand their exhibition. Following gadgets in a static domain is a lot simpler than following articles in precise condition. In like manner, in a powerful environmental framework together foundation and substance fluctuates [1].

On a simple level, to determine this normal unconstrained problem is inflexible. One can put a meeting of impulsion to make this problem liable. The more the impulsions, the problem is casual to tackle. Identification and following of moving article is trying out yet essential errand in video statement framework. Present day world requires brief video observation framework. The video observation framework is meant to be coordinated on identification of activities of intrigue, arrangement and following of shifting articles. Moving item region and following has its software nearly in every recorded including military, workplaces, banks, school for safety reason. Programmed video reconnaissance is good sized for the sector of protection. The undertaking of dependably identifying and following moving article area and following to be particular radar innovation and image managing innovation. In this paper image managing innovation is utilized for place and following of moving item. Discovery, characterization and following are the 3 great strides for any article identity and following framework.

A Novel Approach for Malicious Node Detection in Cluster-Head Gateway Switching Routing in Mobile Ad Hoc Networks

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ABSTRACT

Ad hoc network is a group of wireless networks that permits communicating directly with another node without a router. Every node imparts inside a scope of wireless transmission. MANET is a gathering of multi-hop remote ad hoc network. Every node transmits the message to another node by means of a remote network. This network is totally hazardous and along these vulnerable to attackers. Every device in MANET is dynamic in nature and over and again changes its links to different devices. Mobile ad hoc network (MANET) is a persistent, self-arranged, adaptable, low capacity independent and infrastructure less network associated with cell phones. There are various issues that emerge in the administration and directing between nodes in the network since wireless network deal with a dynamic topology. The primary reason for algorithm routing is to give the best and optimum distance route from source to destination. When sending packet to destination, none of the nodes from the source to the destination node through intermediate nodes send an acknowledgement to the source node. At that point that node is known as a malicious node. Therefore, different techniques for perceiving that malicious node have been portrayed. The success of a ad hoc network relies upon the open's trust in its security. Different strategies are utilized to identify malicious nodes. This paper is tied in with managing malicious nodes for secure information transmission. Malicious nodes are nodes that influence the other nodes. MANET incorporates highlights, for example, military, disaster influenced zones and dynamic topology, fixed infrastructure. Anyway it has some security issues and difficulties. MANET[7] is vulnerable to against different attacks because of its open media. In this way, there is a need to concentrate in detail how to identify malicious or misbehaving nodes[8] in the network. In this paper, different strategies for distinguishing the misuse of the node are introduced. Strategies introduced in this proposition are: Watchdog, ExWatchDog, TWOK, and OCEAN.

Keywords: MANET, Ad Hoc, Networks, CGSR, Watchdog, Routing, Malicious Node

1. Introduction

Ad hoc network is a bunch of wireless networks. In PC organizing, ad hoc network refers to the network foundation where it doesn't require any switch or base station. For instance, in the event that you need to move a document to your companion's PC, you can set up a transitory system between your PC and others system by means of some system to move the data. It can communicate with one another utilizing a link media or a PC's remote medium. In the event that you need to impart records to PC or any systems administration gadget to another gadget, you can set up a multi-hop specially appointed system that can move information over numerous nodes. For the most part, a specially appointed system is an impermanent system association intended for a particular reason, for example, sharing information starting with one PC then onto the next.

Remote versatile [17] specially appointed systems are self-arranging, solid and dynamic systems in which nodes are moving in various ways. Rather than depending on a base station to organize the progression of messages to every hub in the system, Wireless systems don't have the complexities of framework arrangement and