Recognizing and Refinement of Contorted Fingerprint Based on Various Unique Fingerprint Images

G. Padmapriya, M. Aruna, B. Arthi and V. Vennila

Abstract Nowadays there is a chance for false mismatch of fingerprints due to elastic distorted. This is the main problem which wholly affects the fingerprint recognition techniques and applications mainly in false recognition techniques in duplication recognition. In such applications the intruders modify their original fingerprints and they will try to mismatch their identification in all biometric security systems and applications. The proposed work mainly concentrates on developing a novel algorithm to identify and recognize the original fingerprint and to minimize the skin distorted. The proposed work contorted recognizing and refinement is proposed as classification problem for registered ridge orientation map class and period map of a fingerprint class which is considered as regression problem. Here the input image is contorted fingerprint image and the output obtained is distorted fields. To evaluate the crisis a database is created with large amount of distorted reference fingerprints with its distortion fields. If any nearest neighbour of the input fingerprint is identified then their respective distortion field is utilized to identify the normal fingerprint image. The evaluation results have show efficient output.

Keywords Elastic · Ridge orientation map · Rectification · Regression problem

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Recent Technologies for Enhancing Performance and Reducing Emissions in Diesel Engines

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Chapter 7
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Deep Learning based Performance Analysis of Nutritional Contents in Food Images

S. Kavitha[1*], S. Pavithra[1] and S. Karthikeyan[2]

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ABSTRACT

In the present day scenario, analysis of nutrition and calories in daily food intake has become indispensable. The increasing obesity problems have made a significant effect on the people to be concerned about the calories they consume. In this paper, we propose a food calorie measurement system that can help them to measure and manage daily food intake. This method is employed to identify if the food image is good or rotten. If it is found to be good then it is taken for calorie measurement analysis and classified based on standard calorific tables using Self-Adaptive Resource Allocation Network [SARAN]. Then, based on the BMI of a person, the result alarms about whether the food under analysis is suitable to the person or not. Improvement in the performance analysis were carried out on ALEXNET Architecture based On Deep Convolutional Neural network. The results show that the accuracy of the system is acceptable and it will greatly improve and facilitate current manual calorie measurement techniques.

Keywords: Food image processing; calorie measurement; obesity management; dietary assessment.

1. INTRODUCTION

Nowadays, the increasing rate of overweight children and adults is a worldwide health issue. Obesity is a major problem which is increasing day by day. This frames the basic cause for all the health issues like hypertension, heart attack, type II diabetes, high cholesterol, breast and colon cancers, and breathing disorders. People get easily tempted towards the taste of the food and forget to analyze how much they eat. According to a study published in the noted journal Lancet, India is just behind US and China in this global hazard list of top 10 countries with highest number of obese people. The US topped the list with 13 per cent of the obese people worldwide in 2013, while China and India together accounted for 15 per cent of the world's obese population, with 46 million and 30 million obese people, respectively [1]. According to the study, number of overweight and obese people globally increased from 857 million in 1980 to 2.1 billion in 2013. This is one- third of the world's population. In 2008, more than one in ten of the world's adult populations were obese [2], but in 2012 this figure has risen to one in six adults [3], an alarming growth rate.

The weight reduction treatments have also been increased on the other hand. Various dietary modifications, behavior modifications, doing regular exercises, self-assessments are followed but people lack in the awareness of how much calories they can consume for a day.

Calories are a must for the body, as they are generate energy. But as it is said that an excess of anything is bad and the same applies to the intake of calories too. If there is an excess of calories in our body, it gets stored in the form of fats, thus making us overweight. Adult calorie requirements differ from that of a child and in the same way, the daily calorie requirement of an athlete would differ from that of a person who does not have a very active routine. Thus, the calorie intake requirement differs from person to person, depending upon several factors like age and body composition [4]. In Table 1, the daily calorie needs of male and female are sorted accordingly to their age groups.

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Chapter 13
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A Unified 3-R Outlook for Interior Water Treatment

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ABSTRACT

Water is critical for all life on the planet. Rapid industrialization and urbanization has caused India to face a water crisis since it has only 4 percent of the world's water resources. In order to resolve the crisis, India has to look for alternative water resources which may include rainwater harvesting, grey water and sewage reuse and desalination. Grey water is defined as waste water generated from the bathroom, laundry and kitchens. Nearly 70 percent of the water used in households results in grey water which can be treated using simple technology and reused. Reuse of grey water reduces the fresh water requirements and reduces the amount of sewage sent to treatment plants. An integrated approach is needed to manage the water and waste water treatment so that water supply is kept clean and waste water is recycled for beneficial use in agriculture and industry. Water and energy are important resources in the 21st century. Water is required to supply energy and energy is required to supply water. The reclamation of wastewater can contribute significantly to the conservation of water and energy resources. Wastewater reclamation and reuse can relieve water scarcity. Reclaimed wastewater can be substituted for natural water. Wastewater is now extensively recognized as an important source of water in water-scarce countries. In recent years not only the threats of improper grey water management have been recognized; there is an increasing international recognition that grey water reuse, if properly done, has a great potential as alternative water source for purposes such as irrigation, toilet flushing, car washing and others. The economic value of grey water from households and small communities is often underestimated. In terms of nutrients, grey water may largely replace commercial fertilizers. For many low-income households, food is the main total daily cost factor. Grey water-irrigated gardens and crop trees develop favorably if certain irrigation rules are followed. Use of treated grey water for irrigation thus contributes to a more balanced food diet and relieves the household budget.

Keywords: Grey water; irrigation; reclamation; electro-oxidation; electro-coagulation.

1. INTRODUCTION

1.1 Grey Water

Waste water generally is made of black water and grey water. Grey water also known as sullage is non-industrial waste water generated from domestic processes such as washing dishes, laundry and bathing (Fig. 1). Grey water comprises 50-80% of residential waste water. Grey water is distinct from black water in the amount and composition of its chemical and biological contaminants (from faces or toxic chemicals).Grey water gets its name from its cloudy appearance and from its status as being neither fresh nor heavily polluted. Essentially, any water, other than toilet wastes, draining from a household is grey water. Although this used water may contain grease, food particles, hair and any number of other impurities, it may still be suitable for reuse [1,2,3].

1.2 Composition of Grey Water

The composition of grey water from its various sources is clearly illustrated in (Table 1).

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Chapter 14
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Restoration of Koolipalayam Reservoir by Using Bioclean STP Technology in Tirupur District, Tamilnadu

S. Mohan[1], N. Muralimohan[2*] and P. Tamilchelvan[3]

DOI: 10.9734/bpi/etert/v5

ABSTRACT

This study revealed a poor situation for the lack of water bodies and the available water bodies being polluted by dying unit effluents and other harmful industrial effluents being let out into the available water source due to lack of waste disposal units. The demand for water in and around Tirupur region is very high as the water bodies are very few in number even the available water bodies are being polluted by dying unit effluents and other harmful industrial effluents being let out into the available water source due to lack of waste disposal units. This Kollipalayam reservoir has been a home for several inland and migratory birds for centuries. The water source is the Nallar River, flowing from the Avinashi big Tank and few sewage canals, carrying the effluents and sewage from Tirupur town. Eventually the water level has never come down due to the above sources. The flora and fauna of this tank attracts as many as 135 species of birds from all over. Inland birds like Spot-billed Pelicans, Painted Storks, and etc. It also brings in a huge number of species from other parts of the World during the winter. Starting from November, every year, various birds flock in to kollipalayam reservoir and spend their winter and leave back to their home by the end of March. Bio-Ozolyte Technology has been implemented to treat and restoration the water in the reservoir. In this technology involves three treatments they are biological treatment, Ozone treatment and Anoyte treatment. This study strongly recommends increases the dissolved oxygen level in the water and makes the water favorable for existence of organisms and fit for usage. If this reservoir is restored, all water demands in and around Tirupur can be met.

Keywords: Kollipalayam resrvoir; restoration; biodiversity; bioclean STP; bio-ozolyte; anoyte treatment.

1. INTRODUCTION

1.1 General

Lakes are the important water resources which support millions of people, but due to rapid urbanization and industrialization, many thousands of lakes adjacent to urban center has already been closed. The remaining lakes are most useful for holding domestic waste water and dumping of solid wastes and debris [1,2].

Rapid industrial development, urbanization and increase in agricultural production have led to freshwater shortages in many parts of the world [3]. The water resources of the basin remain almost constant while the demand for water continues to increase. The utilizable water resources of India are stimulated to be 1123 BCM is surface water resources and 433 BCM is ground water resources [4].

Wastewater from different industries possess different characteristics and discharging of the effluents without proper treatment into streams, rivers or an land will lead to serious consequences. There are

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Chapter 12
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Feasibility Studies on Removal Efficacy of Treatment of Textile Effluent Using Natural Coagulants in Erode District

N. Muralimohan[1*] and T. Palanisamy[2]

DOI: 10.9734/bpi/crdc/v2

ABSTRACT

An explorative investigation was conducted for the feasible use of natural coagulants in the treatment of textile effluent in Erode district of Tamil Nadu (India). In this article, three natural coagulants namely *Moringa oleifera*, *Tamarina indica*, *Strychonomous potatorum* of 10, 20, 40, 60 and 80 mL dosages were used to spot the suitable one as primary coagulant. Floc formation in coagulation process had been studied in the laboratory scale to determine the optimum dosage of natural coagulants. Pre and post treated textile wastewaters with natural coagulants were considered to evaluate the percentage removal efficiency on the major pollutants of concern in textile effluent such as pH, turbidity, TSS, TDS, COD and BOD. Influence of settling time of natural coagulants on the removal of physiochemical characteristics of textile effluent was studied. From the observed results, the natural coagulant *Moringa oleifera* gives better removal efficiencies with respect to turbidity, TSS, TDS, COD and BOD and appears to be suitable for textile effluent treatment in Erode district, when compared with *Tamarina indica* and *Strychonomous potatorum*. The surface morphology of the untreated textile effluent and treated textile effluent with optimum dosage of *M. oleifera*, *T. indica* and *S. potatorum* were observed by means of SEM analysis.

Keywords: Moringa oliefera; Tamarina indica; Strychonomous potatorum; textile effluent.

1. INTRODUCTION

India is the world's second major manufacturer of textiles and garments after china. The textile and garment industry in India is one of the oldest manufacturing sectors in the country and is currently it's largest. The textile and garment industry fulfils a pivotal role in the Indian economy. Especially Tamilnadu is famous for dyeing, knit wearing, silk sarees, RMG, surgical textiles and for blankets. Erode district in Tamilnadu is situated at the centre of the South Indian peninsula between 11°19.5" and 11°81.05" North latitude and 77°42.5" and 77°44.5" East longitude. Recently, it was observed that Erode district in Tamilnadu were experiencing severe environmental problems due to textile dyeing, leather tanning, paper and pulp processing, sugar manufacturing industries, *etc*.

Textile industry involves wide range of raw materials, machineries and processes to trick the required shape and properties of the final product. The main cause of generation of this effluent is the use of huge volume of water either in the actual chemical processing or during re-processing in preparatory, dyeing, printing and finishing. Textile wastewater pollutants are generally caustic soda, detergents, starch, wax, urea, ammonia, pigments and dyes that increase its BOD, COD, solid contents and toxicity [1]. The treatment methods of waste-water include activated carbon adsorption, oxidation, chemical coagulation/flocculation, electrochemical methods, membrane techniques [2,3] and biological treatment processes are frequently used to treat textile effluents. These processes are generally efficient for Biochemical oxygen demand (BOD) and suspended solids (SS) removal, but they are largely ineffective for removing color from the wastewater [4]. Depending on the waste-water

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Chapter 6
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Comprehensive Study on Removal Efficiency of Strychonomous Potatorum and Alum as Blended Coagulant for Treatment of Textile Effluent

N. Muralimohan[1*], P. Sudha[1] and T. Palanisamy[2]

DOI: 10.9734/bpi/etert/v4

ABSTRACT

An explorative investigation was conducted for the viable utilization of Strychonomous potatorum seed powder and alum as a blended coagulant for the treatment of textile mill effluent. In this article, natural coagulant Strychonomous potatorum (SP) and conventional Coagulant Alum $Al_2(SO_4)_3$ of 10, 20, 40, 60 and 80 mg/L dosages were used. Different proportions of SP: $Al_2(SO_4)_3$ like 0:0 (P0), 10:90 (P1), 20:80 (P2), 30:70 (P3), 40:60 (P4), 50:50 (P5),60:40 (P6),70:30 (P7), 80:20 (P8) and 90:10 (P9) were used in Pre and post treated textile mill effluents. Formation of floc during coagulation process has been studied in the laboratory extent to ascertain the optimum dosage of blended coagulants and to estimate the percentage removal efficiency of major pollutants in textile mill effluent such as turbidity, TSS, TDS, COD and BOD. when compared with other dosage, from the observed results, the blended coagulant SP: $Al_2(SO_4)_3$ of 40:60 dosage ratio offers better removal efficiencies with respect to turbidity, TSS, TDS, COD and BOD and it has been suggested as an appropriate dosage for the treatment of textile mill effluent.

Keywords: Alum; Strychonomous potatorum; textile mill effluent.

1. INTRODUCTION

Waste water disposal is the major setback being face by developing countries, like India. Currently, only about 10% of the generated waste water is treated and the remnant is discharged into water bodies. India is the world's second largest producer of textiles and garments after China. Textile dyeing processes are among the most environmentally unfriendly industrial Processes, because they produce colored wastewaters that are heavily polluted with dyes, textile auxiliaries and chemicals [1]. Wastewater generated by different production steps of a textile mill have a high pH, temperature, detergents, oil, suspended and dissolved solids, dispersants, leveling agents, toxic and non biodegradable matter, color and alkalinity. Important pollutants in textile effluent are mainly recalcitrant organics, color, toxicants and surfactants, chlorinated compounds (AOX) [2]. In the past several decades, many techniques have been developed to find an economic and efficient way to treat the textile wastewater. The treatment methods of industrial wastewater include activated carbon adsorption, oxidation, chemical coagulation/flocculation; electrochemical methods, membrane techniques [3] and biological treatment processes are frequently used to treat textile effluents. These processes are generally efficient for Biochemical oxygen demand (BOD) and suspended solids (SS) removal, but they are largely ineffective for removing color from the wastewater [4]. But coagulation-flocculation is the most common chemical treatment method used for Decolourization and to achieve maximum removal of COD and TSS [5,6]. Moreover Colloid particles are removed from industrial wastewater via coagulation and the flocculation processes by using many inorganic, synthetic organic polymers and naturally occurring coagulants [7,8].

Aluminium salts are the most widely used coagulants in water and wastewater treatment all over the world. However, the studies by several workers have raised doubts about introducing aluminum into

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Aluminium Alloys and Composites

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Contents

Chapter

Wear Behaviour of Aluminium Alloy 8011 with 4% Fly Ash Composites by Using Sensitivity Analysis

Subramaniam Magibalan

Abstract

The current research work is focused on fabrication of Aluminium Alloy 8011 with 4% fly ash composite (AA8011-4% FA) by using the stir casting method. Wear behaviour and description of the composite are evaluated in different process parameters by using a pin-on-disc at room temperature. Fly ash (FA) in the range of (4 wt. %, average micron size 10–30 μm) is included into the matrix, and its sensitivity analysis is investigated. Three level of Central Composite Design model is developed by using Response Surface Methodology equation with different process parameters via load, time and sliding velocity are separate in the range of (5–15 N), (5–15 min) and (1.5–4.5 m/s) respectively. The surface plot shows that wear rate increases with increasing load, time and sliding velocity. A sensitivity analysis is also carried out and compared with the relative impact of input parameters on wear behaviour in order to verify the measurement errors on the values of the uncertainty in estimated parameters of three inputs such as normal load, time and sliding velocity on wear rate (WR) and coefficient of friction (COF). The result shows that normal load is more sensitive than the other parameters. The variation of load causes more changes in wear rate.

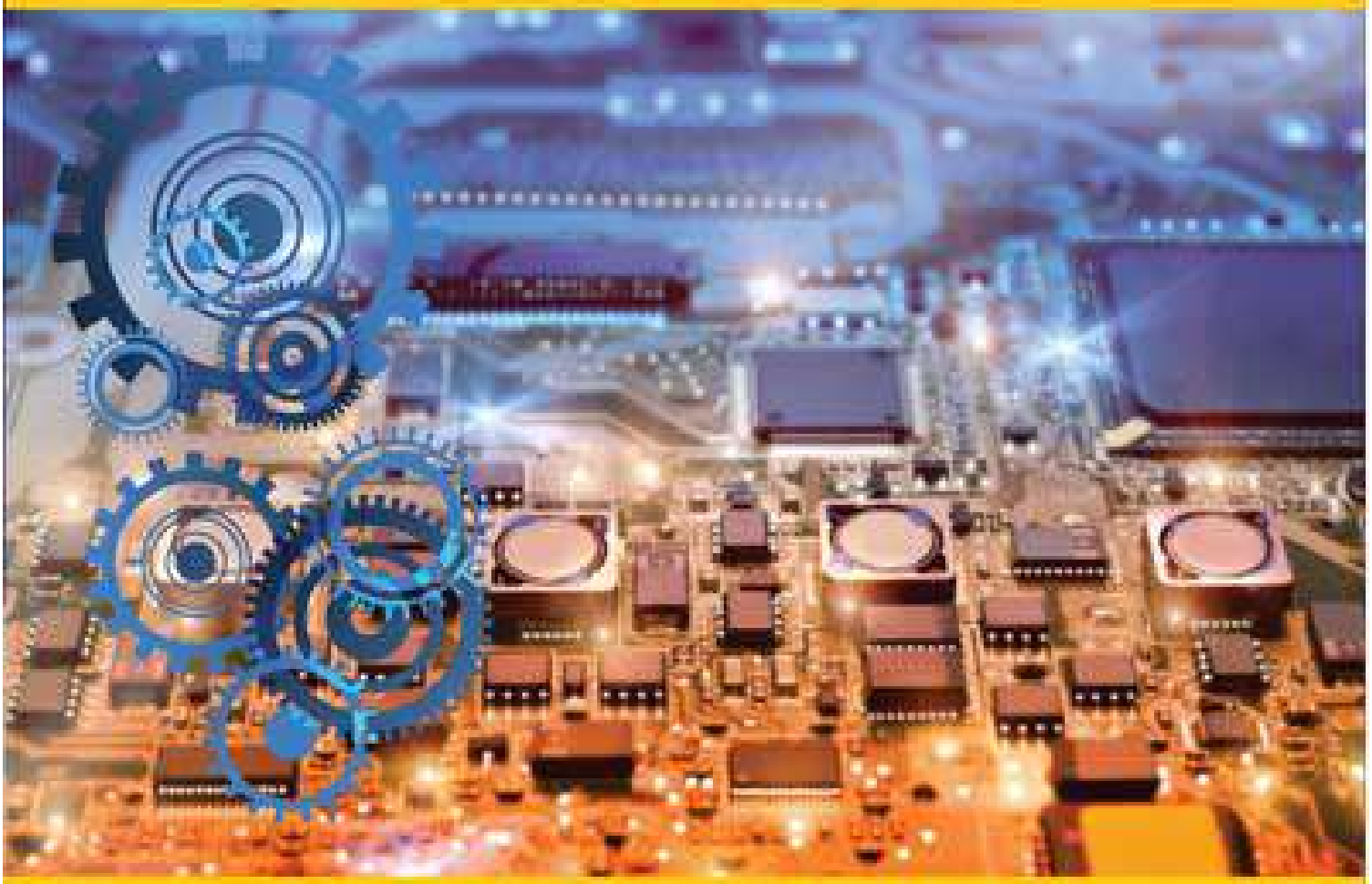
Keywords: aluminium alloy 8011 (AA8011), fly ash (FA), response surface methodology (RSM), wear rate (WR), coefficient of friction (COF), sensitivity analysis (SA)

1. Introduction

Metal matrix composites (MMCs) occur as an essential category of material used in space and transportation industries. There is an inclusive in dropping the wear in demand to decrease the tradition of material properties and expenditure of energy. This controlling of wear should be considered cautiously from the idea of choosing the alloy composition, reinforcement and additionally the process techniques. The incorporation of hard reinforcement segments, particulates, fibres and whiskers has been capable of these composites through smart tribological characteristics [2, 8, 12–18].

These reinforcements will either be value-added ex-situ or created as in-situ composites within the dissolved. It is glowing well-known that in-situ supports stay

Emerging Trends in Mechanical, Computing and Electrical Sciences



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Contents

4

Electrical Discharge Machining of Al 6061- 8% Tib_2 Metal Matrix Composite

M. Prabu[1], S. Magibalan[2], C. Senthil Kumar[3], P. Senthil Kumar[4], T. Suresh Kumar[5]

Abstract

The present work is therefore initiated to investigate the influence of some of the predominant electro discharge machining process parameters such as Current, Pulse ON-time, Flushing pressure and Vibration on the metal removal rate (MRR) and tool wear rate (TWR) on electro discharge machining of Al6061 Al alloy with 8volume percentages of titanium boride particulate (TiB_2p) composites. Response Surface Methodology (RSM) is used to identify the most important parameters to maximize the metal removal rate and minimize the tool wear rate. Experiments are designed on the basis of central composite second order rotatable design

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IoT based Agriculture Monitoring and Smart Irrigation System using Raspberry Pi

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Abstract – Internet of Things (IoT) is a shared Network of items where these gadgets interact through Internet. One of the essential programs of IoT is Smart Agriculture. Smart Agriculture reduces wastage of water, fertilizers and increases the crop yield. Here a system is proposed to screen crop-field the usage of sensors for soil moisture, humidity and temperature. By tracking these parameters, the irrigation gadget can be computerized if soil moisture is low.

Keywords - Soil moisture sensor, IoT, Cloud As the networking, Wi-Fi networking, Raspberry Pi.

I. INTRODUCTION

As the sector is trending in the direction of new technologies and implementations it's far a vital intention to fashion up in agriculture too. Many researches are done in the area of agriculture and most of them signify using wireless sensor network that collect records from one-of-a-kind sensors deployed at diverse nodes and ship it thru the wireless protocol. The collected records offer the records approximately the diverse environmental factors. Monitoring the environmental factors is not the complete way to growth the yield of crops. There are range of other elements that decrease the productiveness. Hence, automation should be carried out in agriculture to conquer those problems. In order to provide way to such problems, it's miles important to expand an integrated machine which wills enhance productivity in each stage. But, whole automation in agriculture isn't achieved because of various issues. Though its miles applied in the research level, it isn't always given to the farmers as a product to get benefitted from the resources. Hence, this paper deals approximately developing clever agriculture the use of IoT and given to the farmers.

II. LITERATURE SURVEY

The new scenario of decreasing water, drying up of rivers and tanks, unpredictable environment, gift an urgent want of right utilization of water. To cope up with this use of temperature and moisture, sensors are positioned at suitable places for tracking the crops. After studies inside the agricultural discipline, researchers found that the yield of agriculture is reducing day by means of day. However, use of technology in the subject of agriculture performs an essential function in growing the production in addition to in reducing the manpower. Some of the research attempts are performed for betterment of farmers that offer structures which use agriculture plays an important role in increasing the production as well as in reducing the manpower. Some of the research attempts are done for betterment of farmers that provide systems which use Technologies beneficial for increasing the agricultural yield. The cloud computing gadgets create a whole computing device from sensors to equipment that observe statistics from agricultural field and as it should be feed the information into the repositories. This concept proposes a unique methodology for clever farming through linking a smart sensing gadget and smart irrigation machine through wireless communication technology. It proposes a low fee and green wifi sensor network approach to accumulate the soil moisture, Humidity, temperature from various places of field and as per the need of crop water motor is enabled. It proposes an idea approximately how automated irrigation device became developed to optimize water use for agricultural purposes.

III. SYSTEM OVERVIEW

The venture is composed of 4 main components: Raspberry Pi, DHT11Sensor, Soil Moisture Sensor, Relay. The block diagram is shown below:

UTILITY MAXIMIZATION USING ENHANCED QOS PARAMETERS ON CLOUD STORAGE

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Cloud storage(CS**)** is a model of data storage in which the digital data is stored in logical pools, the physical storage spans multiple servers (and often locations).cloud storage faces conflict in packet delivery rate and delay in transmission of data from user to the cloud storage server. In Cross layer communication. In this paper a Sectored-Antenna (SA) based protocol is proposed to address the packet delivery rate. The mathematical and experimental results shows proposed scheme is the suggestive alternate that increases in packet delivery rate with reduced average delay that shows the proposed protocol can dealing with QoS requirements.

FOOD QUALITY MONITORING SYSTEM

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The increase of adaptable sensors over the last a long time has been investigated through the aim of developing innovative gadgets by means of programs in several fields of technology, including within the meals industry. The integration of such sensors in food packaging generation takes paved the manner for shrewd meals packaging. These integrated structures are accomplished of presenting consistent facts about the pleasant of the food products at some stage in their storage period. To end this goal, wise packs use a range of sensors suitable for tracking the quality and protection of food products with the aid of recording the increase of restrictions like the quantity of pathogen agents, gases, temperature, humidity and storage period. This era, after pooled with IoT, is capable of deliver lots more facts than conventional meals examination technologies, that are restricted to weight, volume, shade and piece inspection. The distinctive gadget defined on this work is based on a humble then effective approach of integrated food tracking, right at the customer home, proper for user organized vacuum-packed foods. It builds upon the IoT concept and is able to make a community of interrelated gadgets. In using this approach, we're capable to combine actuators and sensing devices also imparting a commonplace working picture (COP) via distribution statistics over the platforms. More quite, our device consists of gas, temperature and humidity sensors, which give the vital statistics wanted for comparing the high-quality of the packed product. This information is conveyed wirelessly to a computer device providing an interface where the consumer can look at the boom of the product excellence over time.

AUTOMATIC LIGHTING SYSTEM USING PIC MICROCONTROLLER

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Directly, one of the overwhelming issues that of we tumble is that administration wastage. In our homes, schools, universities and enterprises, we see that fans and lights are consistently kept ON at some future time if nothing in the feast or angle or entry. To avoid one a status we have planned this complimentary "Homeroom Automation". In our complimentary, along by all of machines concern (for example fans and lights) we have incorporated "Participation Monitoring" and "Message Transmission". Current age homerooms are prepared by the entire of electronic gadgets that have additionally abetting programming to recover and advance educating techniques. Be that as it may, it is normally observed that good class augur is stewed on seizure participation, or the class submit face interference guerdon to withdraw sections of understudies and unsettling influences, for example, the manual away from groupie and light. Thusly, to recover these issues a the two feet on the ground program is made in this theory freebee that will have no worldly mediation from instructors, understudies or floor participation. Consequently, the position will rush the smooth night and day of the remarkable classes at our association, and diminish foretell misfortune. Consequently in rapidly the fundamental want of our free ride is to spare power, time and keep up in working of study hall framework easily.

A VERSATILE SENTIMENT ANALYSIS OF MULTIPLE ONLINE REVIEWS

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In this Work, we present a novel strategy in producing summaries of multiple online reviews using a fine-grained sentiment extraction model for short texts, which is versatile to various areas and languages. Flexibility of a model is characterized as its capacity to be effectively altered and be usable on various areas and languages. This is significant as a result of the decent variety of spaces and languages accessible. The fine-grained sentiment extraction model is separated into two strategies: feeling order and perspective extraction. The estimation classifier is assembled using a three-level arrangement approach, while the aspect extractor is constructed using expanded biterm point model (eBTM), an augmentation of Latent Dirichlet Allocation subject model for short reviews. Generally speaking, results show that the conclusion classifier beats gauge models and industry-standard classifiers while the angle extractor beats other point models regarding viewpoint assorted variety and perspective extricating power. Likewise, using the Naver movies dataset, we show that online review summarization can be adequately built using the proposed strategies by looking at the consequences of our strategy and the results of a movie grants function.

SEMANTIC-BASED FOLLOWER RECOMMENDATIONS ON TWITTER NETWORK

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Traffic Analysis and size in large networks is very challenging assignment for community managers. Cheating Bandwidth performs a Twitter is an interesting platform for the dissemination of news. The real-time nature and reference of the tweets are conducive to sharing of data associated with important events as they unfold. One of the greatest challenges is to find the tweets that we can characterize as news in the block of tweets. In this paper, we proposed a method for detecting and tracking breaking news from Twitter in real-time. We filter the stream of incoming tweets to get rid of junk tweets employing a text classification algorithm. Then, we rank the news using a dynamic scoring system which also allows us to track the news over a period of time.

AN IMPROVED LSB IMAGE STEGANOGRAPHY USING ELLIPTIC CURVE CRYPTOGRAPHY

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Within the field of pc networks, cryptography and steganography are the well-known options for best security purpose. the most plan is to transmit the information firmly. So, providing acceptable level of security is crucial for knowledge transmission. conjointly it ought to cut back the time complexness of the protection algorithmic rule. Here we've used the “Elliptic Curve Cryptography” theme to code the information and image. A “Least important Bit” steganography algorithmic rule is employed to insert the encrypted knowledge to be hidden within the image so as to send the information firmly. The encrypted knowledge from the image is then decrypted by the coding algorithmic rule. Finally the hidden knowledge is taken from the decrypted knowledge. Then the image is compressed before causing through the net. MATLAB is employed to simulate results that show that it's smart embedding capability and security.

IOT BASED AGRICULTURE MONITORING AND SMART IRRIGATION SYSTEM USING RASPBERRY PI

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IOT is a shared Network of items where these gadgets interact through Internet. One of the essential programs of IOT is Smart Agriculture. Smart Agriculture reduces wastage of water, fertilizers and increases the crop yield. Here a system is proposed to screen crop-field the usage of sensors for soil moisture, humidity and temperature. By tracking these parameters, the irrigation gadget can be computerized if soil moisture is low.

AIR POLLUTION MONITORING AND CONTROLLING SYSTEM USING IOT

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Pollution level are increased day to day by means of massive chemical industries ,non recyclable products manufacturing industries and more transportation producing more toxins in atmosphere which results in dangerous consequences on human well being through without delay affecting fitness of population exposed to it. In order to monitor quality of air, water quality and sound level of the environment over IoT based new framework is proposed which is based on data acquisition, transmission ,controlling and aims to building a robust system that help to reduce it and to decrease human interference. And monitoring air over a local host using internet and will activate an alarm when the air quality goes down beyond a non inhale level, means when there is sufficient amount of harmful gases are present in the air like chemical substances. PPM on the LCD and in addition to on net page so that we will display and manipulate it very easily. In this IoT project, you can control the polluted air through O2 blower and monitor the pollution level from anywhere using your Wi-Fi enabled computer or mobile devices.

Automated Attendance Management and Reporting System using Face Recognition

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Abstract - The Uniqueness or individuality of a private is his face. during this project face of a personal is used for the aim of attendance making automatically. Attendance of the scholar is extremely important for each college, universities and faculty. Conventional methodology for taking attendance is by calling the name or roll number of the scholar and thus the attendance is recorded. Time consumption for this purpose may be a crucial point of concern. Assume that the duration for one subject is around hour or 1 hour & to record attendance takes 5 to 10 minutes. For each tutor this is often consumption of your time. To remain away from these losses, an automatic process is used during this project which is based on image processing. During this project face detection and face recognition is used. Face detection is employed to locate the position of face region and face recognition is employed for marking the understudy's attendance. The database of all the scholars within the class is stored and when the face of the individual student matches with one among the faces stored within the database then the attendance is recorded. The attendance maintaining system is difficult process if it's done manually. The smart and automatic attendance system for managing the attendance are often implemented using the varied ways of biometrics. Face recognition is one among them. By using this technique, the difficulty of faux attendance and proxies are often solved. Within the previous face recognition-based attendance system, there have been some disadvantages like intensity of sunshine problem and head pose problem. Therefore, to beat these issues, various techniques like illumination invariant, Viola and Jones algorithm, Principle component analysis are used. the main steps during this system are detecting the faces and recognizing them. After these, the comparison of detected faces are often done by cross checking with the database of student's faces. This smart system are going to be an efficient thanks to maintain the attendance and records of scholars. In a classroom with large number of students, it is a very tedious and time-consuming task to take the attendance manually. Therefore, we can implement an effective system which will mark the attendance of students automatically by recognizing their faces. The process of this face recognition system is divided into various steps, but the important steps are detection of face and recognition of face. Firstly, to mark the attendance of students, the image of students' faces will be required. This image can be snapped from the camera device, which will be placed in the classroom at a suitable location from where the whole classroom can be covered. This image will act as input to the system. For the effective face detection, the image needs to be enhanced by using some image processing techniques like grayscale conversion of image and histogram equalization. To identify the students sitting on the last rows neatly, the histogram equalization of image needs to be done.

Keywords - Biometrics, Face recognition, Smart Attendance.

I. INTRODUCTION

Attendance is prime important for both the teacher and student of a tutorial organization. So, it's vital to stay record of the attendance. the matter arises once we believe the normal process of taking attendance in school room. Calling name or roll number of the scholar for attendance is not only a haul of sometime consumption but also it needs energy. So, an automatic attendance system can solve all above problems. There are some automatic attendances making system which are currently employed by much institution. one among such system is biometric technique. Although it is automatic and a step before traditional method it fails to satisfy the time constraint. the scholar possesses to attend in queue for giving attendance, which is time taking. This project introduces an involuntary attendance marking system, destitute of any quite interference with the normal teaching procedure. The system are often also implemented during exam sessions or in other teaching activities where attendance is

FORTHY DISTURBANCE FINDING METHOD FOR INTERNET OF THINGS

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The present day increase in vehicle site visitors is one of the liabilities for this rather growing and aggressive world. The existing systems of vehicle visitors video display units have been successful in coping up with the various factors that affect day by day life and have helped to conquer the difficulties of common man to journey better notwithstanding raising traffic. Thinking of the growing innovations and improvement inside the Internet of Things, the implementation of a vehicle site visitors monitoring machine the use of IoTwould offer a faster, green and yet correct results. With the rising population spending maximum in their time travelling, stuck amongst visitors, finding a way to lessen this time will make it fruitful for everyone. The paper therefore shows Wireless sensor networks are increasingly used in a wide range of potential applications, including security and surveillance, control, actuation and maintenance of complex systems and fine-grain monitoring of indoor and outdoor environments. The nature of wireless sensor networks makes them very vulnerable to attack. The mobile nodes are randomly distributed, there are no physical obstacles for the adversary, therefore, they can be easily captured, and attacks can come from all directions and target any node. Consequently, security of wireless sensor networks (WSN) is the most challenging for this type of network.

Intrusion Detection Systems (IDSs) can play an important role in detecting and preventing security attacks the system utilizes new and simple technology for real-time collection, agency and transmission of statistics to provide a green and correct estimation of traffic density in any unique area.

THE MOBILE BASED SMART WOMEN SAFETY DEVICE

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These days the safety of an individual is at stake, it may be due to the increasing crimes such as the sexual assaults, molestation, abuse etc. So in order to prevent these to a certain extent, this paper proposes smart device with camera to prevent the above mentioned cause, which has access to internet (IoT). The GSM and GPS are used to identify the victim's location when in need. The victim location is shared to the near by police station and to the preregistered mobile number. The buzzer alerts the surroundings of the victim.

Water Distribution System

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Abstract*:* During the past years, water needs have increased unpredictably in India. Increasing demand of water system has become a serious challenge for the planet. Wasteful substance of water, climatic changes and Urbanization has further depleted the resource. Conservation and management of the resource must tend utmost importance. In this Journal paper, we present an IoT format for water monitoring and control approach which supports internet-based data collection on real time Environment. The system addresses new challenges within the water sector -flow rate measuring and therefore the need for a study of the availability of water to curb water wastage and encourage its conservation. We also measure the standard of water distributed to each household by deploying pH and conductivity sensors. The traditional water metering systems require periodic human intervention for maintenance making it inconvenient and sometimes least effective. For shortcoming of the prevailing models for a ubiquitous usage of wireless systems for smart quality monitoring and communicate data wirelessly.

Keywords: IOT, Wi-fi, Conductivity Sensor.

I. INTRODUCTION

Water is an important substance for all the livings on the World. In that, some people are not getting sufficient amount of water due to unequal distribution. We can use this approach in order that everyone gets the equal amount of water. It is also wont to avoid the wastage of water during the distribution period. In the previous method, the worker will attend that place and open the valve for a specific duration, but the worker will attend an equivalent place and close the valve, it is waste of time. The proposed system is fully automated. Here human work and time are saved.

To ensure the safe supply of beverage the quality should be seen in real time for the motive of new approach IOT (Internet of Things) based water condition monitoring has been proposed. In this project, we'll implement the planning of IOT base water quality monitoring system that monitors the standard of water in real time. This system consists some sensors which measure the water standard parameter.

The real-time monitoring of water resources information will benefit the water resources management department and therefore the public. The primary concept of real-time IOT based water resources data system is to supply comprehensive and accurate information. The system is developed through defining some explicit water substance parameters then, Water level and flow parameter are defined for water measure & management, followed by a sensor network for water resources information monitoring is made supported IOT. According to recent survey, water has become a big issue because of less rain fall, increase in population many cities are facing this problem people must suffer from this problem, they don't have plenty amount for their daily needs. Due to lack of monitoring water can't be shared properly, some areas in city get water while other some areas can't so, there's a requirement of continuous monitoring, water supply scheduling and proper distribution another problems are excessive consumption, overflow of tanks, leakage in pipeline, interrupted water system. Water may be a basic need of each person everyone 2has got to save the water many an times with lack of monitoring ,overflow of those overhead tanks can occur because of this many water get wasted, another thing due to overflow within the pipelines with more pressure there's possibility of pipeline damage, leakage detection is another problem of these problems are due to lack of monitoring, manual work, less man power, Before implementing this project I even have taken a survey of Aurangabad city and field survey to understand water system distribution and related problems with the system, after taking a survey I observe that each one the work is manual and wish a far better technology to form proper distribution. By that specialize in problems in

ASSESSING DESIGNS OF INTERACTIVE VOICE RESPONSE SYSTEMS FOR BETTER USABILITY

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Interactive Voice Response Systems (IVR) have arose as a current medium to access data over phones. Despite the low usability of IVR systems, they are widely used by profitable organizations due to high reach of phones. Several studies have absorbed on improving the usability and design of IVR systems. An IVR can be designed in several ways which container have one or more features like touch-tone, speech recognition, content penetrating etc. However, selecting an appropriate design needs comparison of dissimilar designs. In this paper, we propose an data space with three dimensions to study the usability of IVR design as an Data System. We study two dissimilar IVR plans real world deployment and controlled experiment. We additional link these with the traditional IVR design over the future dimensions of Data space.

NUMBER PLATE DETECTION USING DEEP NEURAL NETWORKS

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A license plate popularity (LPR) device employs photograph system techniques, to help to identify the vehicles through their plates. License plate reputation can be a method, anyplace 1st the license plate region is localized for the duration of a vehicle photo so the characters on the plate are known by using a individual recognition machine. The popularity may be exhausted 3 steps: Localization of the plate, extraction of the plate characters, and reputation of the characters using a suitable identification methodology. In our assignment we will be predisposed to suggest are placement approach to analyze automobile photos which frequently incorporate blurred pick of car from that we have a propensity to extract license plate (LP). By victimizing the natural homes like finding vertical and horizontal ledges. Initially, segmentation method named as sliding concentric windows (SCW) is employed for detecting candidate vicinity. Then the complete photograph is turned for correcting tilt via varied angle. Finally, a replacement algorithmic program supported synthetic neural network (ANN) referred to as Deep Neural Network(DPP) is employed for popularity of plate characters. Numerous LP images of various vehicles are used with a variety of conditions to check the projected technique and effects are conferred to prove its effectiveness.

Profit Maximization and Workload Consolidation Datacenter in Cloud

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Abstract — In this paper shows the Cloud providers to give cloud customers to two provisioning plans are On-Request plan and Reservation structures. Since it gives clients a feasible technique to allot enlisting assets are proficiently to satisfy needs. For the most part, cost of utilizing figuring resources provisioned by on-demand plan is higher than reservation plan. Since reservation plan can give offer of customer can reduce the relentless resource provisioning cost. To control the cloud assets adaptively subject to the booking structure for under over provisioning (RTUOP) tally. The RTUOP calculation is utilized to multi provisioning times of significant lot game plan. The OCRP predominantly considered in the interest and worth vulnerability. The approaches of the RTUOP figuring are considered including drinking gorges separating deterministic indistinct game plan and stochastic whole number programming. To beat this issue to interface by the situation decay techniques (SRT) to decrease the measure of conditions and effectively limit firm expense of advantage provisioning in cloud conditions.

Keywords – Distributed computing, asset provisioning, virtual machine, stochastic programming, and situation decrease method.

I. INTRODUCTION

Circulated registering is a broad scale appropriated figuring perspective in which a pool of handling resources is open to customers by methods for the web. A couple of examples are opening the time of Distributed computing, which is a Web based improvement and usage of PC development. The ever more affordable and even more predominant processors, together with the item as an organization (SaaS) figuring designing, are changing server ranch into pool of enrolling organization on a goliath scale. The Web as an organization (IaaS) is extending framework information move limit and strong yet versatile framework affiliations. In this model considered, virtualization developments can be used to offer resources for cloud buyers. The clients can choose the essential programming stack like applications and working frameworks. The equipment prerequisite of VMs can likewise be change by the shoppers. Finally, those VMs will be redistributed to have in registering conditions. In this paper, restricting both under provisioning and over provisioning issues under the intrigue and worth powerlessness in circulated registering circumstances is our motivation to explore a benefit provisioning framework for cloud purchasers. A perfect cloud resource provisioning (OCRP) estimation is proposed to restrict the total cost for provisioning resources in a particular time range. To pick an ideal choice, the interest lack of protection from cloud purchaser side and worth shortcoming from cloud suppliers are considered to modify the trade-off between on-request and oversubscribed expenses. This ideal choice is picked up by counting and managing a stochastic whole number programming issue with multistage technique. Drinking gorges separating and test regular theory are additionally talked about as the potential systems to deal with the RTUOP figuring. Wide numerical assessments and ages are performed, and the outcomes show that RTUOP can limit the full-scale cost under weakness. A cloud supplier is responsible for ensuring the Nature of Administrations (QoS) for running the VMs. The pioneer of Distributed processing brokers, Amazon Straightforward Stockpiling Administration (S3) and Amazon Flexible Figure Cloud (ECOST2) are both gotten perspectives.

II. RELATED WORKS

In [1], Accessible asset provisioning choices was proposed. A profile-based way to deal with oversee get pro's information of scaling applications was proposed in [9] which extra referenced assets can be significantly more competently provisioned. The possibility of advantage opening was proposed in [3]. In [4] the section case of extraordinary weights is surveyed by using electronic envisioning techniques. In [10], heuristic system for organization reservation was proposed. Estimate of intrigue was performed to describe reservation costs. In [2], K-nearest neighbours count was associated with envision the enthusiasm of benefits. In [11], a dynamic VM game plan was proposed. In any case, the position is heuristic based which cannot guarantee the perfect game plan. The perfect virtual machine circumstance (OVMP) figuring was proposed in [7]. This OVMP estimation can yield the perfect response for the two resources provisioning and VM game plan in two provisioning stages. In [8] present the OCRP computation in this paper

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A Machine Learning Approach for Prevention of SQL Injection

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Abstract – In today's scenario, web application firewalls are an essential protection mechanism for online software system. In Internet age, the most critical security risk of vulnerable web applications is SQL Injection attacks. With the increasing threats of SQL Injections, Web Application Firewall (WAF) must be updated and tested regularly to prevent attackers from easily attacking them. As technology grows, the number of attackers who intend to attack the applications find numerous new ways to enter the system. Thus, the existing systems find it difficult to cope up with the new hackers with new technologies to completely save the system. In the existing WAF, the white box testing and static analysis approach needs access to source code. The model-based testing requires more sets of rules. The black box testing is not efficient for detecting SQL injection attacks. Machine learning is an application of artificial intelligence that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. The concept of collaborating machine learning with web application firewalls increases the efficiency of the existing system. The approach used in this paper is Unsupervised Learning Technique. The algorithm used for Unsupervised learning technique is the k-means algorithm which is used for clustering problems. The flow of the system can be given as follows. The end user makes a request in the Web application, the values of the request are extracted and sent to the SQL injection detector, which provides two layers of security. In the first layer of security, patterns are generated using CFGs for low level attacks. The second layer of security for high level attacks is trained using Unsupervised Learning Algorithm.

Keywords - SQL Injections, SQL Injection Detector, Two-layer Security, Unsupervised Learning Technique

I. INTRODUCTION

A web application firewall (WAF) is used in HTTP applications as application firewalls. It applies a collection of rules to HTTP conversation. Generally, these rules cowl common attacks like cross-site scripting (XSS) and SQL injection. While proxies typically shield clients, WAFs shield servers. A WAF is deployed to shield a selected internet application or set of internet applications. A WAF may be thought as a reverse proxy. WAFs might be available in the form of an appliance, server plugin or filter and can also be custom-built to an application. The hassle to perform this customization may be insignificant because, if there is any need to change the application, the WAFs should also be maintained according to the change.

Web applications with high security requirements are commonly protected by WAFs. In an overall system architecture, a WAF is placed in front of the web application that must be protected. Every request that is sent to the web application is examined by the WAF before it reaches the web application. The WAF hands over the request to the web application only if the request complies with the firewall rule set. Since the threat of cyber-attacks are growing day by day, the WAFs are getting complicated. Also, manually testing and maintaining the principles is an issue. Therefore, automatic testing techniques for WAFs are crucial to stop malicious requests from reaching internet applications and services. In this paper, the focus is on testing efforts on a common category of attacks, namely, SQL injections (SQLi). SQLi has received a lot of attention from practitioners [2 - 3], [5 - 6], [12], [15 - 18], [20]. The Open Web Application Security Project (OWASP) finds that the prevalence of SQLi vulnerabilities is common and the impact of a successful exploitation is severe.

SQLi is an attack technique in which attackers inject malicious SQL code fragments into input parameters that lack proper validation or sanitization. An attacker might construct input values in a way that changes the behavior of the resulting SQL statement and performs arbitrary actions on the database(e.g., exposure of sensitive data, insertion or alteration of data without authorization, loss of data, or even taking control of the database server). SQLi attacks have never lost it's trend and always possess a major threat to the web applications of various domains.

This paper considers three main categories of SQLi attacks in the grammar 1) Boolean; 2) Union and 3) Piggy-backed. These types of attacks aim at manipulating the intended logic by injecting additional SQL code fragments in the original

A COMPARATIVE ANALYSIS USING MACHINE LEARNING APPROACH FOR SLEEP APNEA DISORDER MINING

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Java with Weka was used as a Data mining tool for the classification of data. Firstly, we will assess the presentation of all the techniques separately with the help of tables and graphs depending upon the dataset and secondly, we will compare the presentation of all the techniques.

AEFFICIENT ENHANCED CHEATING-RESILIENT BANDWIDTH DISTRIBUTION SYSTEM

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Traffic Analysis and size in large networks is very challenging assignment for community managers. Cheating Bandwidth performs a crucial role all through community traffic evaluation and management. Cheating Bandwidth allocation becomes a vital difficulty for powerful network management. Cheating Bandwidth on demand concept steadily evolved at the same time as addressing the need of network managers for tracking on-demand traffic. Use of green Cheating Bandwidth allocation set of rules drastically improves network overall performance through assuring availability of network to all users. In this paper, we suggest an optimized set of rules the usage of the idea "rating of net pages", which is based on users' beyond accessibility. This set of rules assigns a minimum assured Cheating Bandwidth to every connected user, as opposed to equally dividing the total to be had Cheating Bandwidth many of the users. Finally, based totally on rating of net pages, any excess Cheating Bandwidth is distributed dynamically among existing users. This considerably improves the common utilization of available Cheating Bandwidth.

AN EFFICIENT CLOUD BASED DATA SHARING WITH HOMOMORPHIC ENCRYPTION APPROACH

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Cloud computing suggestively theatres a part in the feature of real source operation and service consumption. Irrespective of the type of clouds (ex. Private, public, hybrid or inter-cloud), every service providers focuses on the data exist in cloud servers. Each and every moment, the researchers and scholars are proposing multiplicity of security algorithms to secure cloud data during the transactions. Most of the cloud data secure algorithms are focusing on the way to secure to cloud data in a single direction by using cryptographic algorithms. In this study paper emphases on a new direction to combine the features of data compression with the cloud data in order to protect the cloud data storage.

FINANCIAL PLAN AND TIME LIMIT ALERT WITH E- SCIENCE USING WORKFLOW SCHEDULING IN CLOUDS

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Distributed computing is a hot territory of research in nowadays. Cloud is of four kinds: open, private, crossover and network cloud. The cloud depends on three models: SaaS, PaaS, and IaaS. Errand booking is the region where a ton of research has been finished. All things considered, there is a need to plan the assignments or occupations as clients of the mists are expanding every day. In this paper, we give a broad audit of different research calculations identified with task planning. A couple of principal calculations are FCFS, Cooperative effort, Max-Min, Min-Min, Need based and Most Fit Errand Planning. This paper assesses different most recent calculations dependent on the methods like Cooperative Creature Search, Molecule Swam Enhancement, Subterranean insect State Improvement, Hereditary Calculation, Lining hypothesis and so forth., and propose which calculation is better in the record of different parameters like makespan, absolute undertaking execution time, task holding up time, transmission time, the level of lopsidedness, vitality utilizations and so on.

ANALYSIS OF GEOGRAPHICALLY DISTRIBUTED BIGDATA ON CLIMATE CHANGE

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Big Data is a term refers to a collection of large amount of data which requires new technologies tomake potential to get value from it by analysis and capturing method. In every aspect of human life, weather has a lot of importance. It has direct impact on each part of human society or human beings. Accurate analytics of weather collecting, storing and processing a large amount of weather data is necessary. So a scalable data storage platform and efficient or effective change detection algorithms are required to monitor the changes in the environment. An existing or traditional data storage techniques and algorithms are not applicable to process the large amount of weather data. In the proposed system, a scalable data processing framework that is Map-Reduce is used with a climate change detection algorithms which is Spatial Cumulative Sum algorithm and Bootstrap Analysis algorithm. In our method, the large volume of weather data is stored on Hadoop Distributed File System (HDFS) and Map-Reduce algorithm is applied to calculate the minimum and maximum of climate parameters. Spatial Autocorrelation based climate change detection algorithm is proposed to monitor the changes in the climate of a particular city of india.

INTANGIBLE HAND GESTURE BASED HUMAN- COMPUTER INTERACTION SYSTEM

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Human-Computer Interaction (HCI) may be a multidisciplinary field of study specializing in the look of engineering and, particularly, the interaction between humans and computers. The computer technology is growing continuously, the need for natural communication between humans and machines also increases. The communication between the user and the computer can be established through various input devices such as the keyboard, mouse etc. Input devices such as mouse is very useful for device control, this could be inconvenient for people who are not used to it for interaction. The proposed method in this paper uses a webcam which captures the gestures provided as input by the user , input is processed further and functions related to that gesture is carried. Using OpenCV , the captured video is crushed down into endless image frames. The captured images are processed and the gesture is detected. Using the OpenCVlibrary , the cursor movement by hand gesture is done,uses Python programming language, which maintains an ease to grasp code through its primitiveness.Python modules such as PyAuto GUI and packages such as NumPy are used here. Various mouse operations like cursor movements, right click, left click, speed of the cursor, drag and drop have been performed. We have effectively tried our system for an intangible interface between human hand and PC with less complexity.

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Traffic Analysis and size in large networks is very challenging assignment for community managers. Cheating Bandwidth performs a crucial role all through community traffic evaluation and management. Cheating Bandwidth allocation becomes a vital difficulty for powerful network management. Cheating Bandwidth on demand concept steadily evolved at the same time as addressing the need of network managers for tracking on-demand traffic. Use of green Cheating Bandwidth allocation set of rules drastically improves network overall performance through assuring availability of network to all users. In this paper, we suggest an optimized set of rules the usage of the idea "rating of net pages", which is based on users' beyond accessibility. This set of rules assigns a minimum assured Cheating Bandwidth to every connected user, as opposed to equally dividing the total to be had Cheating Bandwidth many of the users. Finally, based totally on rating of net pages, any excess Cheating Bandwidth is distributed dynamically among existing users. This considerably improves the common utilization of available Cheating Bandwidth.

A COMPARATIVE REVIEW OF ETL TOOLS

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Data Warehouse is a vault of vital information from numerous sources accumulated over an extensive stretch of time. Traditional DW tasks for the most part include removing information from different sources, changing these information into a perfect structure and finally stacking them to DW blueprint for additional investigation. The concentrate change load (ETL) capacities should be consolidated into fitting devices so associations can use these apparatuses efficiently as required. There is a wide assortment of such devices accessible in showcase. In this paper, we have looked at changed parts of some well known ETL apparatuses (Informatica, Datastage, Ab Initio, Oracle Data Integrator, SSIS) and have broke down their preferences and drawbacks. We have additionally featured some remarkable highlights (execution improvement, information genealogy, constant information examination, cost, language restricting and so forth) of these instruments and spoke to them with a similar report. Aside from the survey of the ETL instruments, the paper additionally gives input from information science industry which portrays the market esteem and relevance of the devices in down to earth situation. Nonetheless, the customary DW idea is extending quickly with the approach of huge information, distributed computing, ongoing information investigation and the developing need of parsing data from organized and unstructured information sources. In this paper, we have additionally identified these variables which are changing the definition of information warehousing.

WIFI CONTROLLED CENTRAL AUTOMATION USING NODE MCU

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Home automation is becoming accepted due to its frequent benefits. Home mechanization refers to the manage of home appliance and domestic features by local network or by remote control. Artificial Intelligence provides us the frame to go real-time choice and automation for Internet of Things (IoT).The work deals with discussion about different intelligent home automation system and technology from a various features viewpoint. The occupation focus on concept of home automation where the monitoring and control operations are facilitate through smart devices installed in inhabited buildings. various home automation method and knowledge consider in analysis with central controller base (Arduino or Raspberry pi), web based, electronic mail based, Bluetooth-based, mobile-based, SMS based, ZigBee based, double tenor Multi Frequency-based, cloud-based and the Internet with presentation.

A COMPARATIVE REVIEW OF ETL TOOLS

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CRYTOGRAPHIC APPROACH TO SECURELY SHARE AND PROTECT GENOMIC DATA

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At times it is significant to commune secret information to an individual or to a group of selected people and if it is intercepted and changed by an intruder may lead to undesired problems. To protect trusted information and to connect it to the person(s) concerned is a crucial task. One of the methods used for this is Cryptography that ciphers the evidence based on definite algorithm that makes it human unreadable unless decrypted in a predefined method set by the material sender. A large variation of cryptographic systems are used which have their own strengths and weaknesses. Digital data particularly image files are extensively used more internet. This paper is a try to give an outline of software data cryptography and cryptanalysis and employing disordered structure as possible tenacity for image encryption over customary cryptographic algorithms.

VEHICLE THEFT INFORMATION AND TRACKING USING IOT

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Theft prepared limit uses a GSM application made and presented in a mobile phone contraption, which is embedded in the vehicle to talk with the vehicle owner's wireless. The remarkable imprint scanner channels the exceptional sign of the owner of the vehicle, if it isn't the owner, by then the vehicle won't ignite and the correspondence is developed by methods for SMS. The GSM modem is used to send the circumstance of the vehicle from a remote spot. The GPS modem will incessantly give the data to exhibit the circumstance of the vehicle. Comparative data is sent to the compact at the furthest edge from where the circumstance of the vehicle is mentioned. Right when the requesting by the customer is sent to the number at the GSM modem, the system normally sends an appearance answer to that adaptable demonstrating the circumstance of the vehicle. The proposed arrangement gives information with respect to vehicle character, Safe controlling and arranging on steady reason. This information is accumulated by the ARM7 Utilizing different modules.

ONLINE OPD APPOINTMENT AND HOSPITAL INFORMATION SYSTEM

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The Online OPD appointment and Hospital Information System project composed of registration of patient, storing the details, and computerized billing in pharmacy and in medical labs. This software has the power to offer a singular id for each patient and stores the small print of each patient and therefore the staff automatically. It includes an enquiry facility to understand the present status of each and every room. Users can able to find the availability of a doctor and details of a patient using the id. The Hospital Management System are often entered employing a username and password. Only they will be able to add data to the database. The data can be retrieved easily. The interface is very user-friendly. The data are well protected for private use and makes the info processing in no time. Hospital Management System is meant for multi-specialty hospitals, to hide a good range of hospital administration and management processes. Management System that provides relevant information across the hospital to support effective deciding for patient care, hospital administration and important financial accounting, during a seamless flow. Hospital System could even be a software package suite designed to strengthen the standard and management of hospital management within the areas of clinical process analysis and activity-based costing. Hospital Management System enables you to develop your organization and improve its effectiveness and quality of labor. The project is developed in Laravel framework or codelgniter framework. Php and sq. environment is used.

AN IMPROVED COST EFFECTIVE WORKFLOW DEADLINE AWARE TOF WORK FLOW SCHEDULINGON HYBRID CLOUD USING TOF MONTAGE FRAMEWORK

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Many applications running in cloud computing environment are workflow applications which contain large number of precedence specific tasks and so require proper schedule in order to complete successfully. Efficient scheduling of workflow applications is a challenging task. In workflows, the uncertainties like ‘uncertain data transfer time’ among dependent tasks and the uncertain task execution time, if ignored may lead to deadline violation. The proposed TOF Work Flow Schedulingalgorithms so far unconcerned these uncertainties. This paper presents an improved unceRtainty aware TOF Work Flow Schedulingalgorithm abbreviated as i-TOF, that considers the uncertainties of scheduling workflows such as the uncertain running time of tasks in distributed environment when focused upon gave the superior outcome in way of cost and resource utilization, for DAG when compared with the original algorithm. The compared task scheduling algorithms are implemented in Workflowsim.

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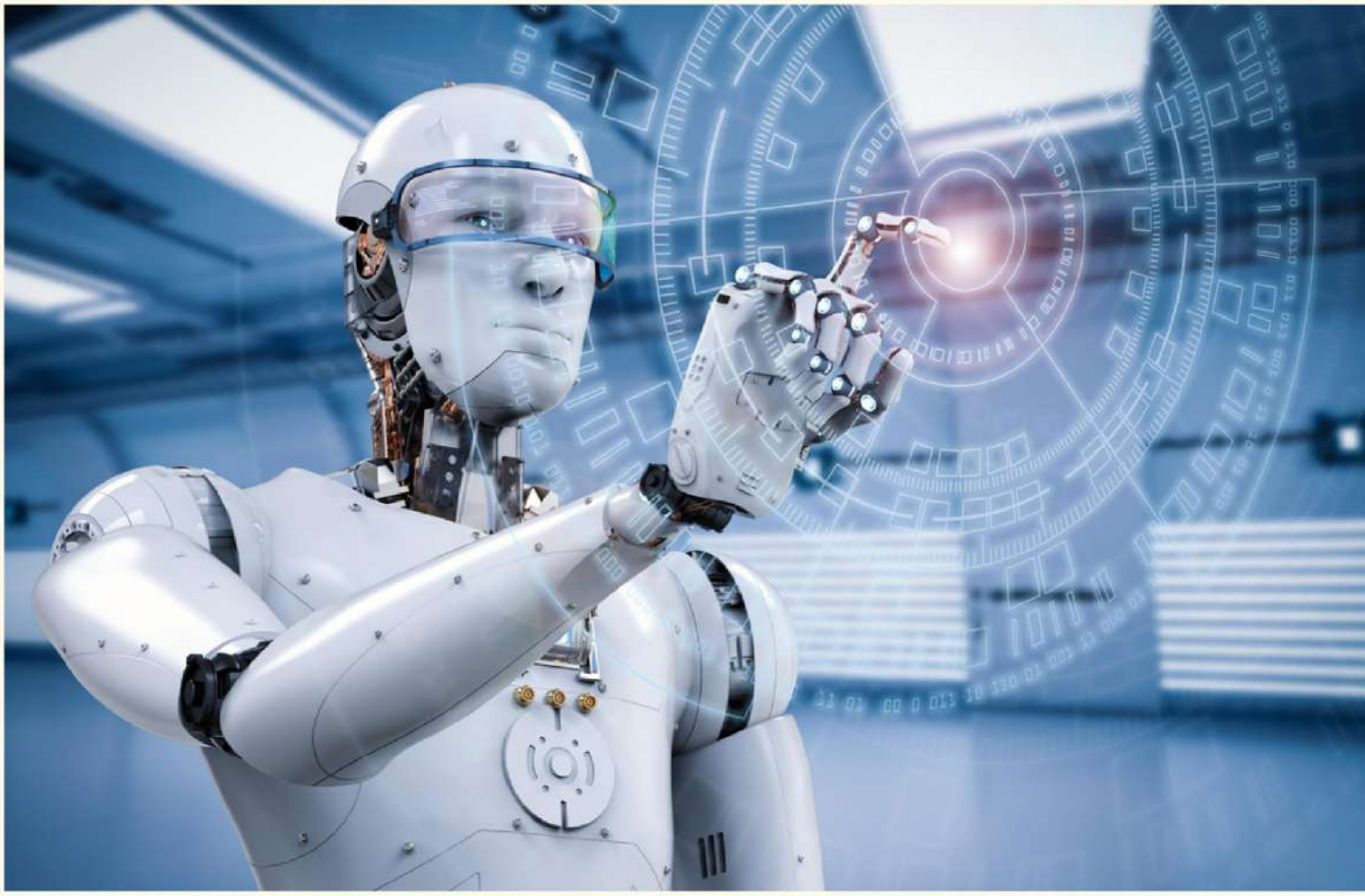

COMPUTER SCIENCE AND ENGINEERING

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INDEX

SMART FARM MONITORING SYSTEM

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Farming is a vital occupation since the history of mankind. From the beginning, agriculture play scrucial part in human society due to the reality that man and agriculture are directly related to each other. Improving farm production is essential for rapidly growing demand for food by rapid growing population across the world. Due to lack of farmers, there is a decrease in the productivity of farming goods, mainly in India. Due to lack of farmers, the monitoring of fields also reduced. This leads to spreading of some diseases, a major health issue. Now-a-days, several species of bacteria and insects affect the plants and crops. So, the farmers are confused on what remedy should be taken for particular disease. Vast fields and low efficiency in crop production due to lack of monitoring together create farming's biggest obstacle. In Indian farming, the selection of crop for the particular season is also a biggest problem. This also reduces the efficiency of agricultural growth.

A Machine Learning Approach for Prevention of SQL Injection

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In today's scenario, web application firewalls are an essential protection mechanism for online software system. In Internet age, the most critical security risk of vulnerable web applications is SQL Injection attacks. With the increasing threats of SQL Injections, Web Application Firewall (WAF) has to be updated and tested regularly to prevent attackers from easily attacking them. As technology grows, the number of attackers who intend to attack the applications find numerous new ways to enter into the system. Thus, the existing systems find it difficult to cope up with the new hackers with new technologies to completely save the system. In the existing WAF, the white box testing and static analysis approach needs access to source code. The model-based testing requires more sets of rules. The black box testing is not efficient for detecting SQL injection attacks. Machine learning is an application of artificial intelligence that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. The concept of collaborating machine learning with web application firewalls increases the efficiency of the existing system. The approach used in this paper is Unsupervised Learning Technique. The algorithm used for Unsupervised learning technique is the k-means algorithm which is used for clustering problems. The flow of the system can be given as follows. The end user makes a request in the Web application, the values of the request are extracted and sent to the SQL injection detector, which provides two layers of security. In the first layer of security, patterns are generated using CFGs for low level attacks. The second layer of security for high level attacks is trained using Unsupervised Learning Algorithm.

REMOVING DUPLICATES FROM MULTIPLE SOURCES BY NORMALIZED RECORDS

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World Wide Web has become the most populated database with increased number of users every day. This makes the search engines to produce duplicate data which has to be solved by de-duplication process. Various methods have been formulated in recent days to solve the issue but every method has one or other demerit that prevents it to be adapted successfully. Hence, in this paper, the patterns of the URLs are utilized to develop a framework for de-duplicating the web pages. The machine learning technique is used to study the pattern and precise rules are generalized. This helps in increasing the coverage. The pair wise rules were generated from duplicate cluster URL pairs. When the web crawlers apply these rules, it normalizes the URLs. The normalized URLs are tokenized and pattern tree is constructed. This is performed over the selected clusters and thus the transformational rule proves efficient in avoiding redundancies in the search results. The feasibility of the proposed methodology with an experimental setup with two different datasets are studied. The results shows that the de-duplication is achieved with good efficiency. The comparative analysis is also made with the existing methodologies.

LIGHT WEIGHT SECURE DATA SHARING SCHEME IN MOBILE CLOUD COMPUTING

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The task unravels and characterizes the trouble of multi-catchphrase positioned search over encoded cloud information (MRSE) while protecting firm framework insightful security in the distributed computing speculation. Subsequently to ensure protection of the information, before security information additionally redistributed to the cloud information that has sensitive to be scrambled, which make the significant information use administration not a simple assignment. Even though accessible encryption strategy enables clients to solidly look over encoded information right through the catchphrases, they convey just hunt Boolean. They are not yet enough to meet the use of the information effectively because there is naturally requested by huge number of information documents and clients situated in cloud. Subsequently it is required to permit numerous catchphrases in the inquiry solicitation and return archives in the request for their hugeness to the watchwords. The watchword Boolean of the hunt method just produces the unsorted outcome. A significant technique proposed for this troublesome issue is protection monitoring search over encoded cloud information. After the information has been encoded and re- appropriated by the information proprietor this technique sets up a lot of protection wants for secure cloud information usage framework during parting the cloud information and putting away the lump information in various servers. Among various multi-catchphrase etiology, this strategy picks the efficient comparability proportion of "arrange coordinating" for looking through method. At that point as indicated by Top K Query conspire the arranged outcomes are made.

PROFIT MAXIMIZATION AND WORKLOAD CONSOLIDATION DATACENTER IN CLOUD

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In this paper shows the Cloud providers to give cloud customers to two provisioning plans are On-Request plan and Reservation structures. Since it gives clients a feasible technique to allot enlisting assets are proficiently to satisfy needs. For the most part, cost of utilizing figuring resources provisioned by on-demand plan is higher than reservation plan. Since reservation plan can give offer of customer can reduce the relentless resource provisioning cost.To control the cloud assets adaptively subject to the booking structure for under over provisioning (RTUOP) tally. The RTUOP calculation is utilized to multi provisioning times of significant lot game plan. The OCRP predominantly considered in the interest and worth vulnerability. The approaches of the RTUOP figuring are considered including drinking gorges separating deterministic indistinct game plan and stochastic whole number programming. To beat this issue to interface by the situation decay techniques (SRT) to decrease the measure of conditions and effectively limit firm expense of advantage provisioning in cloud conditions.

SMART CROP PROTECTION FOR FARMERS IN AGRICULTURE USING IOT

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The problem of untamed animal attacks on crop fields is becoming a very commonplace phenomenon in many unique states.Wild animals like monkeys especially cows and buffaloes, wild dogs, elephants deer, wild pigs and even birds like parakeets cause a variety of harm to plants both by going for walks over them or eating them and vandalizing them completely. This ends in bad yield of crops. In the agriculture region alone, the deployment of IoT has brought about smart farming, precision agriculture and so on. This paper provides the improvement of Internet of Things utility for crop protection to prevent animal intrusions within the crop field.The purpose of our paper is to cope with the trouble of crop vandalization via animals.The main aim of our assignment is to provide a powerful solution to this problem, so that the monetary losses incurred by our farmers are minimized and they have a good crop yield.This system uses an ultrasonic sensor to discover wild animals approaching close to the field. In such a case the sensor signals makes the arduino to take action and also this system provides a buzzer alarm and flash light to distract the animals and immediately sends an alert message to the farmers.

SECURED TRANSMISSION OF TEXT USING DOUBLE ENCRYPTION ALGORITHM

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This paper discusses how a text file is to be kept secret while transmitting from sender to receiver. Thepaper is intended to present techniques for encryption and Steganography. Steganography is the practice of covering messages or information in host data or text or an image. Digital images are the most popular whose frequency of occurrence is more on internet. Steganography, which is a method for securing a message than cryptography that cache the content of the message and not the existence of message. Steganography , which is a tool which allows hidden transmission of information over the communication channel. Stegore image are provided by combining the secret message with the carrier image. In this paper, double coding algorithms are intimate to hide the encrypted text in a host image which then makes the secret message not easy to detect without retrieval. This paper presents a technique that could transmit with a high security.

TRIBALS E-MARKET

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Now a dayslifestyle of the people is different. People feel uncomfortable and time consuming for going to crowded markets. So, E-shopping may be a boon because it saves lot of your time .Online shopping is a process whereby consumers directly buy goods and services from a seller without any intermediary service over the internet. The revolution of mobile phone innovations has opened the doors for companies to realize purchasers through downloadable smart phone applications. These applications expand the usefulness of the advanced mobile phones and empower shoppers to perform different tasks easily. These applications have also produced significant interest thanks to high client engagement. The Project TribalsE-Market is predicated on E-commerce (electronic commerce) is that the activity of electronically buying or selling of products on online services or over the web .E–Marketplace (Like Amazon, flipkart) wherein tribals cannot promote. This app is to sell tribal produce such as handicrafts, arts, paintings, minor forest products etc,.online with provision of delivery, e-payment and promotional discounts. Everything like electric goods, toys, clothes are e-commerce sales only But this is an idea to help the tribalsto sell their products online. So this is new to the world and helpful for poor people. This e-marketplace is developed by using laravelframework. In this tribal people can add their products and cost of the product which comes out to the customer for buying it. They can also add discounts to their product.Itdoes not ask for documents such as GSTIN/TIN Number from the seller because it was developed toovercomeallthosethings.Itwillbringsagreatestsellingoppurtunityforthetribalpeople.

Air Pollution Monitoring and Controlling System Using IoT

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Abstract - Pollution level is increased day to day by means of massive chemical industries, non-recyclable products manufacturing industries and more transportation producing more toxins in atmosphere which results in dangerous consequences on human wellbeing through without delay affecting fitness of population exposed to it. In order to monitor quality of air, water quality and sound level of the environment over IoT based new framework is proposed which is based on data acquisition, transmission, controlling and aims to building a robust system that help to reduce it and to decrease human interference. And monitoring air over a local host using internet and will activate an alarm when the air quality goes down beyond a non-inhale level, means when there is enough harmful gases are present in the air like chemical substances. PPM on the LCD and in addition to on net page so that we will display and manipulate it very easily. In this IoT project, you can control the polluted air through O2 blower and monitor the pollution level from anywhere using your Wi-Fi enabled computer or mobile devices.

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Keywords - MQ2 air quality sensor, Wireless Medium, Air Pollution Controlling, O2 Blower, Water Conductivity Sensor, Sound Sensor.

I. INTRODUCTION

The terms monitoring and evaluation are regularly stressed and used synonymously. The process of industrial satisfactory evaluation is an evaluation of the industrial first-class in terms of standard exceptional set by pollution manipulate board. Due to the complexity of factors determining industrial best, massive variations are determined between one-of-a-kind industries. Similarly, the response to industrial affects is also fairly variable. To design an Industrial machine control and monitoring machine the use of IoT. Surveillance is most crucial security systems in home, industrial, workplace and public places. To construct a robust device which can measure the industrial pollutants and assist to lessen it and to lower human interference in tracking the industrial pollution to lessen air pollution and provide a healthful environment for the employees to paintings in. To build a robust system that evaluates the industrial pollutants continuously and suggests when there may be an growth in emission and controls the polluted air the usage of IoT.

II. RELATED WORKS

Jun Yang Stated that the existence of Sensor networks have been widely used in environment monitoring. Although there are some related works about water pollution monitoring and water pollution source localization using sensor networks, there are many problems which have not been solved so far. In this paper, the current research status on water pollution monitoring and water pollution source localization in sensor networks is illustrated firstly.

Tingkai Liu Stated that the government had been reluctant to address the pollution issue due to concerns about how increasing industry emission controls might affect global competitiveness but with an increasing number of complaints from the expanding middle class coupled with studies that have attributed 1-2 million deaths per year to air pollution the government has now begun to address some of the issues.

Sherine Mary Pollution related deaths increase every year and the leading factor for these deaths is air pollution. Air pollution is caused due to various elements among which pollution due to automobiles plays a pivotal role. Our work considers pollution due to automobiles and provides a real time solution which not just monitors pollution levels but also take into consideration control measures for reducing traffic in highly polluted areas. The solution is provided by a sensor based hardware module which can be placed along roads.

Rizwan Gandomi Internet of Things (IoT) is a worldwide system of “smart devices” that can sense and connect with their surroundings and interact with users and other systems. Global air pollution is one of the major concerns of our era. Existing monitoring systems have inferior precision, low sensitivity, and require laboratory analysis. Therefore, improved

The Mobile Based Smart Women Safety Device

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Abstract - These days the safety of an individual is at stake, it may be due to the increasing crimes such as the sexual assaults, molestation, abuse etc. So in order to prevent these to a certain extent, this paper proposes smart device with camera to prevent the above mentioned cause, which has access to internet (IoT). The GSM and GPS are used to identify the victim's location when in need. The victim location is shared to the near by police station and to the preregistered mobile number. The buzzer alerts the surroundings of the victim.

Keywords - Microcontroller, GSM and GPS, Record video.

I. INTRODUCTION

In Today's world, the safety of women is in danger especially in India. The rate of crimes against women is not decreasing but in fact increasing at an alarming rate especially harassment, molestation, eve teasing, rape, kidnapping and domestic violence. Some of the rape cases are very gruesome and brutal like the Nirbhaya Case in Delhi. Many preventive measures have been taken by the government to stop these misbehaving activities but still has not affected the growing rate of these crimes and has remained unaffected. So, it is primitive to provide an application which helps the women to tackle this problem rapidly and efficiently. So, in order to prevent these to a certain extent, this paper create smart device with camera to prevent the above mentioned cause, which has access to internet (IoT). The GSM and GPS are used to identify the victim's location when in need. The victim location is shared to the nearby the police station and to the pre registered mobile contacts. In order to make them safe, a smart device are developed. Women safety device is specially designed for women in case of dangerous and emergency situation. The women safety devices should be very simple, easy to carry and that should be integrated with several functionalities. The smart phones usage has been drastically increased in the world. There are several mobile application and smart devices are developed by the government and people in order to help the women when they are in the trouble. Even though, they developed various devices and applications the rate of the sexual offenses has not been decreased. The women safety devices or application should be combined with a several features which are used in day today life and real emergency cases.

II. RELATED WORKS

In a country, Sexual offense happen against to the women and children. According to National Crime Records Bureau, New Delhi;

- In 2011, over 42968 the criminal assault to women has increased to 84746 cases in 2016.
- Around 309 acid attack cases are produced in the year 2014.
- In 2011, 24206 rape cases have been enlarged to 38947 cases in 2016.
- According to this statistics, around 92 women's are raped every day in India.

III. EXISTING SYSTEM

As same as the above work Kalpana seelam et al., [1] The articles portrays about the safe and secured electronic framework for women or children which involves an Arduino controller and sensors, the several sensors used in this system are temperature, flex sensors, MEMS accelerometer, pulse rate sensors ad sound sensor. The gadget detects body parameters like heartbeat rate, changes in temperature, movement of victim by flex sensor by flex sensor and MEMS accelerometer and the voice of the injured individual is detected by sound sensor and the location is send to the registered contacts.

ROBUST AND SCALABLE CONTINUOUS INTEGRATION FRAMEWORK TO DEPLOY AND MAINTAIN NPULSE

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Continuous Integration is the most common practice among software developers. It has been around for a while now, but the habits it suggests are far from common practice. Automatic builds, a systematic test suite and binding to the mainline branch every day sound simple at first, but they require a responsible team to implement and persistent care. What starts with improved tooling can be a catalyst for long-lasting change in an organizations shipping culture. Continuous incorporation, distribution and deployment are the software development business practices that enable organizations to regularly and consistently release new features and products. It is important to steadily review and create the approaches, tools, challenges and practices reported for implementing and applying continuous practices. This paper emphases on the continuous integration of enterprise Java application ie.,nPulse, a collaborative framework for continuous integrated delivery based on Jenkins. It covers all the stages of the Software Development Lifecycle starting from managing web containers, auto deploying Web Application Resource, managing database backups, data recovery and developing Application Performance Tools. This platform has the complete suite of tools that need to manage the enterprise application infrastructure.

SECURE DATA GROUP SHARING AND CONDITIONAL DISSEMINATION WITH MULTI-OWNER IN CLOUD COMPUTING

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With the rapid development of cloud services, huge volume of data is shared via cloud confidentiality in cloud computing, current mechanisms cannot enforce privacy concerns over cipher text associated with multiple owners, which makes co-owners unable to appropriately control whether data disseminators can actually disseminate their data. In this paper, we propose a secure data group sharing and conditional dissemination scheme with multi-owner in cloud computing, in which data owner can share private data with a group of users via the cloud in a secure way, and data disseminator can disseminate the data to a new group of users if the attributes satisfy the access policies in the ciphertext .We further present a multiparty computing. Although cryptographic techniques have been utilized to provide data access control mechanism over the disseminated cipher text, in which the data co-owners can append new access policies to the cipher text due to their privacy preferences. Moreover, three policy aggregation strategies, including full permit, owner priority and majority permit, are provided to solve the privacy conflicts problem caused by different access policies. The security analysis and experimental results show our scheme is practical and efficient for secure data sharing with multi-owner in cloud computing.

FUZZY BASED ASSOCIATION RULE MINING AND CLASSIFER FOR MARKET BASKET SCRUNITY TO ENHANCE THE KEY SECURITY IN ORGANIZATION

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Current technical achievements of storing data and database management technologies also provided windows to new productivity techniques for all forms of organization. Market Basket Analysis (often referred to as association rule mining) has become a valuable way of finding company buying trends by collecting associations or co-occurrences in store transaction databases. Since the information gained from the study could be used to shape marketing, sales, service, and operating strategies, it also has generated increased interest in research. Nevertheless, current methods that fail to reveal essential buying patterns in such a multi-store environment, due to an underlying assumption that the items under review are already on shelf throughout all stores most the time. We are implementing a new approach in this paper to address that deficiency. Security is however considered to become an important aspect of individually performed transactions and regular database itemsets that are partitioned horizontally. This research work presents a novel vital protection algorithm which utilizes RSA cryptographic concept based on classifier, in addition to making security for eventually purchased sometimes used item sets of transaction purposes. The classifier uses information of several frequently used itemsets, and presents the actual company with a key value. Eg., if there are any reliance users, only the valid users may get that market info. The majority of the reliance organisation's customers may not permitted to pick the main interest of the results. First, with the aid of the Enhanced Fuzzy-based Weighted Association Rule Mining Algorithm (EFWARM), the frequent itemsets are mined to mine the frequency item set. The Fuzzy-based multi-kernel spherical support vector classifier then optimizes the key functions of the frequently itemsets mined.

ONLINE JOB PORTAL

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The work alternative methodology in today's world economy area unit typically a daunting task for prospective staff regardless of their experience level. It involves an in depth search of newspapers, job websites, human agents, etc., to spot associate employment likelihood that is perceived compatible to skills, anticipated remuneration and social needs. Search sites like get, Academickeys.com, Careerbuilder.com, Job-hunt.org, Monster.com, etc., change prospective staff to register on-line and search and apply for employment. But most do very little to profile employers against staff or even commit to make sure the validity of the data submitted by prospective staff. In addition no information exists on feedback of the leader too on varied criteria submitted by staff. Taking of those into thought we've got an inclination to here have planned associate intelligent agent to perform the same search operations by interacting with the leader and job search organizer agents. All results applicable area unit organized supported a dynamic calculation of expected utility from highest to lowest and displayed because the work search listing.

BLOCKCHAIN FOR CRIME DETECTION AND GOVERNMENT SERVICES IN INDIA

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Using robotization will enable numerous hoodlums to be distinguished and trapped in manners that don't require perilous eye to eye collaborations.By utilizing blockchain innovation to screen, banner, and break down exchanges that might be straightforwardly associated with vicious guiltiness, the danger of observation will turn out to be increasingly.Ablockchain is a developing rundown of records, called blocks, that are connected utilizing cryptography.Each block contains a cryptographic hash of the past block, a timestamp, and exchange information By structure, a blockchain is impervious to change of the information.For use as a disseminated record, a blockchain is regularly overseen by a distributed system all in all clinging to a convention for between hub correspondence and approving new blocks.Whenrecorded, the information in some random square can't be adjusted retroactively without change of every consequent block, which requires agreement of the network larger part.TheBlockchain innovation is a genuine case of a rising innovation that is pulling in government consideration.Numerous administration elements, for example, United Kingdom, Estonia.,Investments in blockchain-based organizations and new businesses have seen a huge flood, all inclusive contacting over $20 billion, over a varietyIn this paper, we audit the writing to distinguish the potential use cases and utilization of Blockchain to empower taxpayer driven organizations.We likewise orchestrated writing identified with the security of Blockchain usage to recognize the security advantages, challenges and the proposed arrangements.The examination demonstrates that is enormous potential for Blockchain innovation to be utilized in to empower brilliant government services.This paper additionally features future research in the regions of worries.

RECENT TRENDS IN M2M AND IOT APPLICATIONS

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The technologies that allow wired or wireless system to communicate with the devices of identical ability. M2M uses a device (sensor, meter etc.) to capture an ‘event’ (motion, video, meter reading, temperature etc.) which is relayed through a network wireless, wired or hybrid to an application (software program), that translates the captured event into significant in sequence.

AIR QUALITY MONITORING SYSTEM

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The main objective of this project is to control air pollution by designing and implementing an Air Quality Monitoring (AQM) system. To reduce air pollution, and also to reduce the health issues caused by air pollution, the air quality monitoring system plays a major role. The air quality monitoring should be capable of measuring the air quality parameters. The parameters to be considered are temperature, humidity, carbon monoxide, low concentration ozone gas, and dust particles. Finally, all the sensor data will be processed by the PIC Microcontroller and the output can be displayed with the help of LCD Display. This air quality system also alerts when the air quality level is greater than the normal value using a buzzer.

A SURVEY ON CREDIT CARD FRAUDDETECTION USING MACHINE LEARNING IN DATA MINING

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Nowadays digitalization gaining popularity because of seamless, effortless and comfort use of ecommerce. It grew to become very rampant and effortless mode of payment. People pick out online fee and e-shopping; because of time convenience, transport convenience, etc. As the end result of large amount of e-commerce use, there is a vast increment in credit card fraud also. Fraudsters strive to misuse the card and transparency of online payments. Thus to overcome with the fraudsters undertaking come to be very essential. The fundamental goal is to secure credit card transactions; so humans can use e-banking safely and easily. To detecting the credit score card fraud there are various techniques which are based totally on Deep learning, Logistic Regression, Naïve Bayesian, Support Vector Machine (SVM), Neural Network, Artificial Immune System, K Nearest Neighbor, Data Mining, Decision Tree, Fuzzy logic based totally System, Genetic Algorithm etc.

GAIT ANALYSIS FOR HUMAN AUTHENTICATION USING DEPTH SENSOR

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The prominence of system for automatic person identification has rise increasingly during the past years. Biometric features from an information security perspective are a process by which the identity of a person can be confirmed. Use of biometric features for authentication is one of the three most widely used approaches. Gait analysis is an important biometric technique for recognizing humans. Unlike other biometric features, human gait can be captured at a distance which makes it a self-effacing method for recognition. This paper focus on an authentication security system which is more oriented towards behavioural characteristics like gait analysis, rather just physical characteristics of humans. This blend of both characteristics helps evolving more powerful authentication system as compared to existing biometric security systems. An unconstrained gait recognition algorithm is proposed which uses 3D skeleton information and angles between skeleton joint points. Kinect sensor captures depth image is used to generate 3D skeleton structure. The temporal tracking of skeleton joints angles formed due body motion kinetics is used for gait analysis. The angles from the 2D representation of 3D data are computed by calculating the vectors between the three joints pairs using atan2 (the arc tangent function with two arguments). These skeleton joints angles forms the trajectories and hence gait model. The gait is acknowledged by calculating the minimum difference measure between the gait models of the training data and the testing data.

AUTOMATIC LEAF PARAMETER MONITORING AND ANALYSIS OF IRRIGATION SYSTEM IN AGRICULTURE USING MACHINE LEARNING TECHNIQUE

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India is a country where most of the people rely on agriculture for leading their lives. There for quality and quantity of each crop is important to have better income. But it may be effected if a disease is caused to a plant . Hence it isnecessary to detect and analyses the disease as early as possible. Accurate exposure and recognition of crop disease thus plays an important role in adequately regulating and preventing disease for feasible agriculture and food preservation. So detection and diagnosis of disease at the right time is essential to the farmer. This paper proposes a simple and creative method which is useful in the leaf disease detection and selection of fertilizers using artificial neural network. This system involves different concepts related to image processing such as image acquisition, image preprocessing, feature extraction, artificial neural network based training, classification, diagnosis and treatment by using Support Vector Machine (SVM). Different texture features of some leaves are used as database for performing the operations. Here we can get the disease name and also the fertilizer which is precise for that disease. It gives better performance compared to other processing system. In this proposed method ATMEGA 8 and front end GUI is used for displaying the values of each parameter. Image processing is used to detect leaf diseases. Do the analysis of proposed method by plotting graph of different parameter with respect to time. By observing graphical analysis farmer can provide nutrient and water through drip irrigation for improving and increasing the crop production.

DENSITY BASED TRAFFIC CONTROL USING IoT

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With the rapid development of road infrastructure, the volume of the vehicle on the road network increases which leads to traffic Congestion. The exact situation exists in the Coimbatore cities. Traffic congestions are amongst the top list of the problems faced in Muscat and other cities around Coimbatore. This is mainly caused due to the rapid suprise in the number of vehicles in a short period. To overcome such an impact of traffic congestions, it is required to develop an IoT Based traffic control system. The proposed system would be based on the measurement of the actual traffic density on the road. This would be achieved using real-time video and image processing techniques. Wherein the images captured and are stored in the server, which will be compared with the real-time image captured via camera to identify the density. The theme is to control the traffic by determining the traffic density on each side of the four roads and enabling a controlling option of the traffic signal to the user through a software application.

MULTIOWNER DATA SHARING USING BLOCK CHAIN

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Ciphertext-Policy Attribute-Based Keyword Search (CP-ABKS) facilitates search queries and supports fine-grained access control over encrypted data in the cloud. However, prior CP-ABKS schemes were designed to support unshared multi-owner setting, and cannot be directly applied in the shared multi-owner setting (where each record is accredited by a fixed number of data owners), without incurring high computational and storage costs. In addition, due to privacy concerns on access policies, most existing schemes are vulnerable to off-line keyword-guessing attacks if the keyword space is of polynomial size. Furthermore, it is difficult to identify malicious users who leak the secret keys when more than one data user has the same subset of attributes. In this paper, we present a privacy-preserving CP-ABKS system with hidden access policy in Shared Multi-owner setting (basic ABKS-SM system), and demonstrate how it is improved to support malicious user tracing (modified ABKS-SM system). We then prove that the proposed ABKS-SM systems achieve selective security and resist off-line keyword-guessing attack in the generic bilinear group model. We also evaluate their performance using real-world datasets.

SMART MONITORING FOR SOLDIER HEALTH AND LOCATION

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The people around the world live a safe life due to the sacrifices of the brave soldiers, in order repay the so we must shield them from risks due to face in the warfare by equipping them with advanced technology. Equipping people especially soldiers to guarantee the security of the state and its stability. Terrorism in a lot area around the world is represented threat on people life. This work designed smart monitoring system for soldiers who protecting the homeland so, it is necessary to help them by using smart monitoring system to avoid any terrorist attack or know their places when the abduction of any one of these soldiers. Supply soldier with modern technological devices makes it easy for us to know the health status and their location and this makes the control rooms in the military fulltime to monitor the enemy rather than preoccupation with monitoring soldiers. Wireless communications devices play an important role in monitoring the soldiers through the use of the devices Global Positioning System (GPS) system, and also SOS messages that help the soldier to adapt with different situation. All the data collected from the sensors and send to the web server to make analysis and also statistics depending on these information Base Stations can make the right decision and send it to the soldier to follow.

NEIGHBOURHOOD PARAMETER PREDICTION IN PATHOLOGY ANALYSIS USING LINEAR REGRESSION

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The main objective of the pathology report analysis is to predict the patients' health supported the available data set using This also manages the main points of test reports and patient's information. The project is completely built at administrative end and thus only the administrator is guaranteed the access. Information has to be securely stored and fully accessible from the primary data acquired to years of usage. This project compromises all software needs like test automation, patient information, specific test control and detailed analysis. A close report is generated supported the regression toward the mean algorithm that helps to predict the patient's health

ENERGY MANAGEMENT SYSTEM TO HANDLE EMERGENCY LOAD MANAGING FOR EV'S AND PORTABLE INVERTERS ON AI

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A variety of rechargeable - batteries are now avail- able in the markets for powering different electronic and electrical devices. The lithium-iron phosphate (LiFePO4)/ Lithium Titanate battery is considered to be the best among all battery types and cells because of its superior characteristics to charge very fast and high performance available in market in earlys of 2020. However, considering the charging speed, safety, life cycle, it is very much difficult to manage the huge load when the system is shifting from main power supply source to stand by source. There needs a time to shut down unnecessary loads to the rating of the inverter, otherwise a huge loss of current. Using an artificial intelligent system, it can be managed easily associating with lithium iron phosphate battery. AI technology can decide the priority and energy using from the system by shutting down the un-necessary loads in a proper way without effecting the working system.

ROBOTIC CUTTING SYSTEM USING VELOCITY SCANNING OF LINEAR CONVEYOR

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In order to do operations on a moving conveyor without stopping it, need to make the relative velocity between the robotic operations arm and the belt conveyor to zero, so that any operations can be done between these two process. In this project as it is a cutting process that can be applied in food manufacturing industries, Proper cutting on required positions on the product to get equal quantity of food product at any conveyor speed is the main objective. The purpose of this model is to vary the production rate according to market requirement, to reduce the damages in the model and to minimize the production cost. So in this proposed model linear speed of a conveyor can be sensed by sensing mechanism which will convert velocity into a pulse train. Number of pulses/second will define a value that is proportional to the linear velocity of the conveyor. By multiplying with some constant we can easily obtain the linear velocity. This constant is the perimeter of the disk which is attached to encoder, which is used to obtain the pulse train. A servo motor is used for cutting process. The speed of linear conveyor obtained, then converts to a suitable voltage that runs the servo motor in synchronized rpm by the help of PLC. The vertical motion for cutting is made through a pneumatic cylinder in which the end effector moves up and down will cut the product perfectly as if it would slices when not in motion. The cutting dimensions will not vary even if the conveyor speed varied. The perfect cutting on product is the result of synchronizing the velocity of robotic system and conveyor.

STEGANOGRAPHY ENCRYPTION TECHNIQUE FOR COMMUNICATION

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Information or hiding data technique embeds records into virtual media for the security reasons. Steganography is a technique by which presence of sensitive message can't be detected and we will use it as a tool for security reason to transmit the confidential data in a secure manner. The purpose is to cover the message in such a manner that no one other than meant recipient even is aware of that the message has been sent. By combining steganography and encryption process, it turns into harder for even the stego-analyst to regain the authentic textual content from the photo. Use a pixel choice filter out to get the good areas to cover message inside the cowl photo to reap a better rate. After this technique Message is hidden using Bit Replacement method. We also propose Pixel Value Differencing for enforcing steganography. In spatial or frequency domain there are Steganographic algorithms are proposed for embedding information in picture as cover.

PLANT LEAF DISEASE DETECTION WITH CLASSIFICATION USING MACHINE LEARNING

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India is an agricultural dependent country wherein most of the economic income comes from agriculture. Improper maintenance and protection of crops leads to more infections and affects the overall production. In India, technology based on modern agriculture is the most requirements in every part of agriculture, to have more profit. This technology helps the farmer to identify what type of diseases that the plant is being affected and suggests some medicine to be given to the affected plant. Thus, the use of this technology in agriculture may help in increasing the productivity and improve the condition of Indian farmers and protection of their product with the use of precision agriculture and also the plant crops can be free from diseases. The infections in the plant parts are processed using the image, and the plants' specific disease is identified. So, using modern technologies identify few diseases of a particular plant which is popularly grown and monitored. This proposed system presents an overview of the classification and detection of plant leaf diseases using machine learning. Within the area of machine learning, neural networks are a subcategory of algorithms built around a model of artificial neurons spread across three or more layers.

STATEMENT ANALYSIS USING NLP

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We aim to draw on an important overlooked poten- tial of affective dialogue systems—their application to promote positive emotional states, similar to that of emotional support be- tween humans. This can be achieved by eliciting a more positive emotional valence throughout a dialogue system interaction, i.e., positive emotion elicitation. Existing works on emotion elicitation have not yet paid attention to the emotional benefit for the users. Moreover, a positive emotion elicitation corpus does not yet exist despite the growing number of emotion-rich corpora. Towards this goal, first, we propose a response retrieval approach for positive emotion elicitation by utilizing examples of emotion appraisal from a dialogue corpus. Second, we efficiently construct a corpus using the proposed retrieval method, by replacing responses in a dialogue with those that elicit a more positive emotion. We validate the cor- pus through crowdsourcing to ensure its quality. Finally, we pro- pose a novel neural network architecture for an emotion-sensitive neural chat-based dialogue system, optimized on the constructed corpus to elicit positive emotion. Objective and subjective evalua- tions show that the proposed methods result in dialogue responses that are more natural and elicit a more positive emotional response. Further analyses of the results are discussed in this paper.

CLOUD TASK SCHEDULING BASED ON TWO STAGE STRATEGY USING KNN AND NEIVE BAYES CLASSIFIER

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In Cloud environment, Virtual Machines are scheduled to hosts based on their instant resource usage without considering their overall and long-term utilization. Also, in many cases, the scheduling and placement processes are computational expensive and affect performance of deployed VMs, so the aim is to minimize such performance degradation.In this work, the virtual machines are scheduled according to the resource monitoring data extracted from past resource utilizations (including PMs and VMs) using KNN and Naive Bayes classification technique. The Euclidean distance of KNN is measured and then virtual machine is scheduled on the physical machine. The count of the physical machine gets reduced by using K-NN & NB classifier than Support Vector Machine classifier. The task performed by 28 physical machine when using SVM is reduced by 24 physical machine by using knn&nb classifier algorithm also the error rates gets decreased by 0.025%.

PRIVACY –PRESERVING FOR PERSONAL SOCIAL MEDIA DATA PUBLISHING FOR PERSONALIZED RANKING- BASED RECOMMENDATION

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In this project personalized advice is vast to assist consumers in finding relevant data. A few anonymization methods, for example, hypothesis has been supposed for safety safeguarding facts distributing. Record comptonization is a real danger to clients of online web-based lifestyles statistics distributing. While persevering spammers misuse the built-up trust connections between account proprietors and their companions to proficiently unfold vindictive assailant, handy place of bargained documents is very testing because of the entrenched trust connection between the expert co-ops, account proprietors, and their companions. In this paper, we learn about the social practices of web-based social networking clients, i.e., their use of internet- primarily based life data distributing, and the utilization of which in figuring out the tradedoff records.

SECURITY IN TRANSMISSION OF DATA AND ENERGY AWARE PATH SELECTION IN WIRELESS SENSOR NETWORKS

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In Wireless Sensor Networks during the process of routing the consumption of energy remains a challenge as mobile nodes have limited battery. We propose method for increasing the lifetime of the network and minimizing the link breakages by choosing the paths for routing, with more available energy. In this paper we propose two schemes based on Adhoc On-Demand Distance Vector (AODV), a reactive routing protocol. In both these schemes, to reduce the control packets overhead, limited mobile nodes can be the part of the routing process. This limitation is based on the received signal strength. The energy efficient available path in terms of residual energy is selected either by the destination node or by intermediate node locally. The simulation results show that our proposed schemes results in the energy efficient routing as compared to traditional AODV.

VOICE CONTROLLED PERSONAL ASSISTANT USING AI

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In this paper to accomplish and achieve these considerations there is a requirement for a stage which can mechanize every one of our errands easily and comfort. Along these lines we have to build up a Personal Assistant having splendid forces of reasoning and the capacity to communicate with the surroundings just by one of the materialistic types of human communication for example human voice. The Hardware gadget catches the sound demand through receiver and procedures the demand with the goal that the gadget can react to the singular utilizing in-fabricated speaker module. For Model, on the off chance that you ask the gadget 'what's the climate' or on the other hand 'how's traffic' utilizing its inherent aptitudes, it turns upward the climate and traffic status individually and afterward restores the reaction to the client and Many gadgets we utilize each day use voice aides. They're on our cell phones and inside brilliant speakers in our homes. Numerous portable applications and working frameworks use them. Furthermore, certain innovation in autos, just as in retail, training, human services, and media communications conditions, can be worked by voices.

APPLICATIONS of ARTIFICIAL INTELLIGENCE in AGRICULTURE

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Every day, farms produce thousands of information points on temperature, soil, usage of water, atmospheric phenomenon, etc. With the assistance of computer science and machine learning models, this data is leveraged in real-time for obtaining useful insights like choosing the correct time to plant seeds, determining the crop choices, hybrid seed choices to get more yields and therefore the like.

DIGITALIZED TRADE FINANCE USING BLOCKCHAIN

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The fundamental lesson from the digital trade finance experiment with digital innovations over the past decade is that centralized solutions in a decentralized ecosystem do not scale. The result has been today's trade ecosystem where data flows freely within, but not between network participants. Blockchain - as a decentralized system has the potential to eliminate data siloes and enable existing innovations to scale. But only if application builders incorporate the lessons of past attempts at transformative, global innovation. To facilitate this process, we introduce a network model of technology diffusion to explain the rise and persistence of digital islands. We then apply this model to blockchain in trade finance. This technology offers peer to peer transactions full transparency for all an opposite party in a contract or financial transaction and instant access to information, thereby providing the ideal means for mistaking the current problems in trade finance. An alternate agreement is eventually shared with the importer financial institution and constitutes the basis for issuing a Letter of Credit also in smart contract form on the platform.

REALTIME FRAUD DETECTION IN HEALTH INSURANCE USING MACHINE LEARNING ALGORITHM

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Fraud event in Health Insurance takes place frequently and have huge financial loss in Realtime. The number of transactions and document submission, has from in large qualities of fraud event. Therefore, fraud detection is in demand to rectify these kinds of issues. This paper focus on detection of fake bill generation, online transaction and during document submission. Each fraud is detected using series of machine learning algorithm. To address the series of problem, we use boosting algorithm for detection of fraud in health insurance companies. For this, we took predictive analysis data and using boosting algorithm.The System have to run over the internet, all of the hardware shall require to connect internet might be hardware interface for the gadget. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable. The machine is on server so it calls for the any scripting language like PHP, VBScript etc. The system requires Data Base also for the shop the any transaction of the system like MYSQL etc. System also require DNS (domain call space) for the naming on the internet. At the last user want internet browser for engage with the device. The end result of the Claim surveillance is greater secure and identification of claim frauds in brief manner. It is useful for insurance corporations and customers.

SMART OFFICE

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The smart office is a organization where technology enables people to work best, faster and, of course, smarter. Beacons, sensors and mobile apps help employees perform menial tasks better and faster, so they have enough time to focus on growing businesses and innovations. The smart office entry system has biometric devices, face recognition systems and RFID tag. The human motion sensor has identified the human motion to operate the AC, Light and Fan. The surveillance camera has monitoring the employees in our office using an IP camera. We have indoor wayfinding to locate the office rooms and places. And then conference room booking can be available and the meeting can be ended to sensor has detected and send the alert message of the availability of conference room bookings. We have smart desks for an employee to ease work experience. We use an IOT technologies to evaluate the office. This project motivation is an automated technology of an office. This project is over all process method. There we using automation process for entry and exit using Biometric device or Face Recognition system. We are using employee monitoring surveillance camera. There employee can use smart system and desks. We have indoor way finding system. There humanity sensor to control the Fan, Ac, Light. We provide high speed network for employees. We have conference room booking system. The employee can choose our working table in their interest. We use climate control for employees. There more security for our employees. Smart offices have become a hotshot term. More companies are adopting solutions to alter their work environment into a smart, interconnected and hi-tech domain. There are a number of distinct benefits of smart devices provided by the smart office's companies.

THE ROLE OF OPEN DATA FOR MAPPING AND COMMUNICATION IN DISASTER MANAGEMENT

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During the last years in India due to flood, heavy rains, landslides and other natural calamities several people get affected and several lost their life. In such situations, providing effective communication and timely response to the requests can save many human lives. The major challenge faced is the timely localization of victims within the disaster area and reliability of network infrastructure at that period. Mapping disaster-prone areas can facilitate the identification of areas that require attention when disasters occur. Disaster data is often incomplete or difficult to access. There's lots of data available, but the problem is making use of it easier is required. This research aims is to develop routing framework for effective mapping the locations by use of Open data for efficient response during disaster management. This can also help officials to priorities the needs and distribute supplies effectively to the people.

SECURE WAY TO AVOID DUPLICATE COPIES OF DATA IN CLOUD USING MAPPING TECHNIQUE

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Cloud computing is that the one among the foremost usable technology which may accessed through internet and allows each individual to share resources, services and data among the users through the network. Cloud provides enough space to store their data. While considering data storage on cloud, the system concentrates on deduplication. Data deduplication is one among the techniques to compress knowledge for eliminating duplication of uploading data, and utilized mostly in cloud to attenuate the capacity of storage and helps to save lots of bandwidth. To safeguard the truthfulness of delicate data when deduplication process, before outsourcing the info , encryption technique is implemented to encrypt data. To secure data with high efficiency, this paper initially concentrates on the difficulty of authenticated data deduplication formally. Unlike conventional deduplication techniques, the users who upload the info to cloud also are considered in verifying duplication beyond the info itself.

Both main memory size and memory interference are considered because the main blockages in virtualized environments. Memory deduplication, the most technique used for detecting pages with similar content and getting to be shared into one single copy, reduces memory requirements. Here proposed a system called secure thanks to avoid duplicate copies of knowledge in cloud using mapping technique. Mapping Technique is employed for deduplication also as wont to make one copy of same data for multiple data owners in Cloud storage. If any of the info owner is stored in same data means the info can't be stored it'll mapped and linked to the document/data. This uses an idea called virtual machine based memory partition called VMMP for diminishing interference among virtual machines. VMMP helps to store the files during a fragmented order. This paper shows the comparison results of deduplication technique with existing and proposed system.

AMBULANCE AND POLICE LOCATION BASED INFORMATION USING IN ANDROID APP

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The range of records approximately affected individual are all of sudden heart trouble, hypertension, lowpressure. Etc, Then any crucial trouble in area, patrol are straight away searching for the situation and consequently the records is correlated with the state of affairs in which it without a doubt emerge as generated. This vicinity-specific records isn't always available to the policeman it truly is patrolling the streets whilst the app isn't always installed. The up so far data, applicable to the present vicinity of the law enforcement officials ship an ambulance. So postpone timing hassle.The android mobiles are widely operated and has achieved biggest sale globally with them massive feature. It's not critical that when you name an ambulance, the closest ambulance will reach. The paper describe a version to hint the nearest free ambulance inside the realm using international positioning machine and bring it to the person in distress. The GPS devices continuously flow with the ambulance and may calculate the co-ordinate of each position and may be obtained on every occasion required through the server. Hence it may track the nearest ambulance and produce it to the individual in distress. Emergencies together with accidents require on the spot medical attention wherein patients need to be transported from the location of incident to hospital. In such situations, emergency structures are important in saving valuable lives. The significance of taking a affected person to hospital can be judged by means of the fact that if the appearance of an ambulance is delayed because of any hassle, it is able to worsen the affected person medical kingdom and even purpose death. The delays can occur due to time ate up for dialing emergency numbers and sporting out verbal exchange for directing the address to the place of incident to the ambulance dispatch service company representative. AADS incorporates of android primarily based software wherein the user (victim or the caretaker of the sufferer) need to press a simple “help” button at the AADS android application to signal and buzz any ambulance near the vicinity of incident at the side of the sufferer’s geographical region just on one click. The goal of this research is to reduce the time consumed for the advent of ambulance through automation.

DATA PERTURBATION TECHNIQUES IN PRIVACY PRESERVING DATA MINING

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Data mining strategies have been facing a serious challenge in recent years due to heightened privacy concerns and concerns, i.e. protecting the privacy of important and sensitive data. Data perturbation is a common Data Mining privacy technique. Data perturbation's biggest challenge is to balance privacy protection and data quality, which is normally considered to be a pair of contradictory factors. Geometric perturbation technique for data is a combination of perturbation technique for rotation, translation, and noise addition. Publishing data while protecting privacy –sensitive details–is particularly useful for data owners.Typical examples include publishing micro data for research purposes or contracting the data to third parties providing services for data mining. In this paper we are trying to explore the latest trends in the technique of perturbation of geometric results.

ACHIEVING SECURITY FOR CLOUD COMPUTING

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In this work mainly focus on how to provide data in security to the cloud environment users. Security is essential factor in the cloud services. Our proposed idea is provide a security to both cloud users and cloud providers. The Cloud Computing Adoption Framework (CCAF) is used for adopting and applying cloud security principles systematically. This framework has key features includes identification, data integrity, privacy and durability. The CCAF has three layers of security such as firewall and access control, identity management and intrusion prevention and convergent encryption. The firewall and access control layer performs intrusion protection used in CCAF to ensure that all data is safeguarded all the times. The second layer identity management and intrusion prevention operates on identifying the user and prevent the system from unauthorized access. The identity management is divided into three roles such as user, CCAF server and security manager. The user can create their own key to encrypt and decrypt the files and send it to the server for storage purpose. The CCAF server will perform three functionalities. First, it authenticates data during storage/retrieval purposes. Second, it can provide access control. Third, it can encrypt and decrypt the data between user and their cloud.

PREDICTION OF CROPS PROFIT USING REGRESSION ALGORITHM

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For the prediction of crops, Accurate and timely spatial classification of crop types based on remote sensing data is important. Explicit crop-type based on year information can be used to estimate crop areas for a variety of monitoring and decision-making applications. The data obtained having tons area and soil nutritious repository gives insight into which crops are suitable to be cultivated in a particular time. The data remains a challenging one due to low temporal revisiting frequency and inevitable cloud contamination. This work presents a system, which uses data analytics techniques in order to predict the most profitable crop in the particular year based on tons. Thus, the project gets developed by integrating data from various sources are processed using data analytics and prediction analysis which can improve crop yield productivity and increase the profit margins of farmers by helping them over a longer run.

A STUDENT GRIEVANCE SUPPORT SYSTEM

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A complaint is a discontent or dispute which could stand up at any level in any enterprise. If the business enterprise is an academic institution, then this issue turns into greater sensitive and important.Thus, on reading the winning kingdom of redressed mechanisms of grievances at a number of the prestigious schools of Madhya Pradesh, it came as a revelation that none of them had a completely formulated complaint redressal mechanism to deal.

ANALYZING SOCIAL GROUP INFORMATION USING DATA SCIENCE TECHNIQUES

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The social media has huge amount of data generated from various sources like individual data posting, sharing of information, post in group, and publication of video, comments, reply, and massager data, broadcast and so on. The social media content are grows exponential and the data received in unstructured manner. It is really very critical task to identify useful information to the personal and corporate level. The traditional database system is not much effective to acquire needed information to the user. The current research is focus on the effective way of discover useful information from the social media data. The data science is new emerging technology to identify useful information from large amount of data. DBMS and traditional data mining techniques are not much effective to derive useful knowledge from raw data. In this research paper data science techniques are applied and acquire knowledge from given database. Normally the data are processed in connection with frequent item sent mining, rule based mining and so on. The proposed methodology gives more impact toimplication of data towards progress. This technique is useful for the organizations to take their managerial decisions.

APP DEVELOPMENT on FOOD PROCESSING PROBLEMS

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The web food ordering system gives restaurants the power to extend sales and expand their business by giving customers the power to order food online. With a web restaurant menu ordering system, customers can place orders online 24 *7. Thus it's an easy, fast and convenient food ordering system giving a foothold over the competition at a reasonable price. Internet has seen an incredible growth in terms of coverage and awareness. So giving the business an online presence has become very crucial and importance of reduce food wastage. If wastage of food in functions after dinner,lunch,break fast it directly intimate old age home through the phonecalls and SMS .It reduce wastage of food from restaurant, hotels and It looking benefit of orphan.

AN EFFECTIVE MODEL FOR DIABETES PREDICTION BASED ON PRINCIPAL COMPONENTS ANALYSIS

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Today Diabetes has become a serious malady that is becoming quickly around the world. A great deal of research and work has been done on the equivalent and it shows that there is a need of some robotized framework which would assist the diabetic patients with receiving emergency clinic suggestion and each and every one.The future framework utilizes the SVM classifier to arrange the individual into diabetic positive or negative class. The diabetic positive patients are then bunched into various group according to the seriousness of the malady. The framework additionally prescribes all the close by clinics to the patients and the age of QR code diminishes the patients cerebral pain of conveying the papers/reports, and in this way causes the specialists to more readily comprehend the patient's diabetic casehistory.

A SURVEY on INTRUSION DETECTION SYSTEM in WIRELESS SENSOR NETWORKS INCORPORATED to INTERNET of THINGS DEPLOYMENT

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Presently, A ton of utilizations that are making our lives agreeable, for example, smart car, brilliant homes, shrewd traffic the board, savvy workplaces, smart medicinal consultation, smart urban areas, and so forth. Every single ability is in the range of a typical man in view of the advancement in Information and Communications Technology (ICT). Due to this advancement, Internet of Things (IoT) came into display. Part of research work is in progress in IoT area which helps for the general advancement of the public and makes the lives simple and agreeable. However, in the asset compelled condition of Wireless Sensor Network (WSN) and IoT, it is practically unfathomable to set up a completely secure framework. It is turning out to be increasingly more helpless against the security dangers. In future, the quantity of Internet associated individuals will be not exactly the brilliant items so we have to set up a strong framework for keeping the previously mentioned situations protected and regulated for smooth conduction of comparison among IoT objects. This survey paper, report the information of risk model for security of WSN and IoT based networking and also discuss about the security conditions and different assaults conceivable in WSN and IoT based according to situations. Thus the subtleties of various structures of WSN and IoT based correspondence conditions will also be provided. The present issues and challenges identified with WSN and IoT gives a basic of ongoing intrusion detection system for IoT and WSN conditions alongside their similar analysis. A scientific classification of security and privacy preservation protocol in WSN and IoT is additionally featured. Some exploration challenges which should be tended in the upcoming future can also be discussed.

FAMILIAR PROPERTIES OF PALMYRA PALM FIBER COMPOSITE

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ABSTRACT:

At the present day composites gains charm due to its lightweight and moderate strength in recent industrial areas. Palmyra fiber is a natural fiber obtained from the Palmyra (Borassusflabellifer) tree. The random fiber composites at the Palmyra fiber mechanical properties are studied and the best fiber length and weight percentage are expected. This paper deals with the properties of Palmyra fiber, and there are different types of Palmyra models for composite plates. Epoxy resin is a matrix tensile, impact, and bending properties studied. The mechanical properties of the composites are improved to several different types of invention Palmyra fiber in the matrix.

Keywords: Resin, Mechanical Properties, Compression Moulding.,

REVERSE GEAR MECHANISM IN TWO WHEELER FOR PHYSICALLY CHALLENGED PEOPLE

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Abstract :

Mobility of physically disabled persons is a concerning social issue nowadays. As a help to them, this research paper aims at designing and fabrication a reverse gear mechanism, which will be fitting to the vehicle with little modifications of the existing mechanism. In fast growing modern world many types of vehicles are being innovated. But until now it is a major problem for the physically challenged peoples to move back the vehicles and to "U" turn the vehicles. Even to a small distance they cannot move the vehicles backside. So To eliminate this problem we invent the reverse gear mechanism in two wheeler. The challenged peoples can easily reverse the vehicles without getting down from the vehicle by easily operating hand lever. The main objective of our project is to facilitate 'comfort ability and safety' to the challenged peoples. This project requires the motor vehicle, lever, reverse gear box, sprocket and other necessary parts. When need to reverse the vehicles they can engage the hand lever for reverse gear, the vehicle moves backwards. This project will be more useful for the challenged peoples in the society.

Keywords: Gear Mechanism, Vehicles, Two Wheeler

IMPACT OF ERGONOMICS IN WORKPLACES AND CONTROLS

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ABSTRACT

The term ergonomics was coined from the Greek words ergon (meaning "work") and nomos (meaning "rules). So, the literal meaning is "the rules of work," Ergonomics is the science of fitting the work- place conditions and job demands to the capabilities of the working population. The goal of ergonomics is to make the work place more comfortable and to improve both health and productivity. To meet these goals, the capabilities and limitations of workers and their tools, equipment and furniture are considered in conjunction with how they relate to particular tasks. The major field of application of ergonomics is the attainment of optimal working conditions or the working environment. This is possible by the most suitable use of worker's physical characteristics and physiological and psychological capabilities. It thus covers a very wide area starting from initial conceptual design stage to ultimate aim i.e., production facilities. This study offers a simple, hands-on approach to workplace ergonomics that can work regardless of the size of any organization and number of persons involved in work. It can be used by owners, supervisors, and employees as they work toward improving their workplace and avoid any work-related injury.

Keywords: Ergonomics, Controls, Employees

DESIGN AND FABRICATION OF SOLAR POWERED WOOD CUTTING

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ABSTRACT:

Our project deals with the design and fabrication of solar powered cutting which can be used for cutting various types of products. In existing system or cutting machines, the cutting process takes much time, the cost requirement is also high and it needs long wire for current supply which would get tangled when it is ported to somewhere. Hence we developed a machine which doesn't need current outsource and no need of long wires. Which in turn becomes safer and it can be easily ported. The mechanical part of the machine consists of cutter blade, Electric motor, battery, solar panel and etc. The solar powered cutter is driven by the help of electric motor end of the motor cutter will placed. The electric motor attached will make the cutter blade to cut the products. Thus the solar powered cutter is a simple yet powerful tool to cut the products.

Keywords: Solar panel, Cutting machine & Motor

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The effect of surfactant on structural and optical properties of ZnO nanorods by wet chemical synthesis

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A. Kiruthiga, T. Krishnakumar, and R. Kannan

The effect of surfactant on structural and optical properties of ZnO nanorods by wet chemical synthesis

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Abstract: ZnO nanoparticles have drawn a widespread attention recently due to their novel properties which contribute to various applications especially in gas sensing and optoelectronic devices. This paper presents a surfactant-assisted complex wet chemical method for the controlled preparation of Zinc Oxide (ZnO) nanoparticles using zinc acetate as starting material. Here, the spherical ZnO nanoparticles with average size of less than 50 nm were successfully synthesized and their optical properties were analysed. In order to maximize its efficiency, surface modification with surfactants is vital as ZnO nanoparticles easily agglomerate. The effects of the surfactant on the average particle size and morphology of the ZnO nanoparticles were investigated using X-ray diffraction. Well dispersed ZnO nanoparticles with a uniform size distribution were obtained using Poly Vinyl Alcohol (PVA) as a surfactant. The addition of surfactants controlled the particle size and reduced the formation of agglomerates and at the same time helped to produce more homogenous and uniformly dispersed particles.

Keywords: zinc oxide, nanoparticles, surfactants, PVA and microwave synthesis.

INTRODUCTION

Nanotechnology, another wide concern in modern research and development activities performs much functional operations at quantum level for the prepared powder samples. In particular,ZnO (zinc oxide) is one of the most valuable materials in the study of crystal control because of its electronic and optical properties which are strongly influenced by the various morphologies, crystal sizes, dimensions and aspect ratios[1].Additionally,ZnO,as one of the popular n-type semiconductor metal oxides (SMOS),exhibits a wide band gap(3.37eV) and a high mechanical stability at room temp with a high exciton binding energy of 60 meV.[2].The synthesis procedure has a welcoming feature on the controlled growth of ZnO nanostructures [3,4].As most commonly, the methods involved in nanoparticle synthesis, nanoparticles microwave irradiation gains much importance due to production cost, higher yield rate and enhanced performance [5].On the other hand, the synthesis of nano-crystalline ZnO through wet chemical processes generally needs surfactants to reduce the long reaction time and also to enhance the poor crystallinity of ZnO obtained at low temperature. The effect of different surfactants on the ZnO nucleation has been discussed by many researchers [6-8].ZnO is a polar crystal and some surfactants or polymers interact with specific ZnO facets by chemical adsorption on a polar plane or physical adsorption on a certain plane. So, the surfactant has a speciality to adjust the growth velocity on different ZnO facets. In this paper, we report an easy approach to synthesize single crystalline ZnO with various morphologies using poly vinyl alcohol as surfactant. By adding the amount of PVA (poly vinyl alcohol) we can modify the size and shape of ZnO nanoparticles [9, 10]. Here two samples with different concentrations such as 0.1molar and 0.3molar concentrations were reported.

MATERIALS AND METHODS

Synthesis and Characterizations

The synthesis approach for ZnO nanostructure starts with the defined structure of reactions. The precursors used for this investigation are Zinc acetate and liquid ammonia. Initially zinc acetate was dissolved in double distilled water to obtain 0.1molar concentration. In the same way PVA also dissolved in double distilled water to obtain 0.1

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Chapter 13
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A Unified 3-R Outlook for Interior Water Treatment

K. Neetha Delphin Mary[1*], N. Muralimohan[2] and P. Vijayalakshmi[3]

DOI: 10.9734/bpi/crdc/v2

ABSTRACT

Water is critical for all life on the planet. Rapid industrialization and urbanization has caused India to face a water crisis since it has only 4 percent of the world's water resources. In order to resolve the crisis, India has to look for alternative water resources which may include rainwater harvesting, grey water and sewage reuse and desalination. Grey water is defined as waste water generated from the bathroom, laundry and kitchens. Nearly 70 percent of the water used in households results in grey water which can be treated using simple technology and reused. Reuse of grey water reduces the fresh water requirements and reduces the amount of sewage sent to treatment plants. An integrated approach is needed to manage the water and waste water treatment so that water supply is kept clean and waste water is recycled for beneficial use in agriculture and industry. Water and energy are important resources in the 21st century. Water is required to supply energy and energy is required to supply water. The reclamation of wastewater can contribute significantly to the conservation of water and energy resources. Wastewater reclamation and reuse can relieve water scarcity. Reclaimed wastewater can be substituted for natural water. Wastewater is now extensively recognized as an important source of water in water-scarce countries. In recent years not only the threats of improper grey water management have been recognized; there is an increasing international recognition that grey water reuse, if properly done, has a great potential as alternative water source for purposes such as irrigation, toilet flushing, car washing and others. The economic value of grey water from households and small communities is often underestimated. In terms of nutrients, grey water may largely replace commercial fertilizers. For many low-income households, food is the main total daily cost factor. Grey water-irrigated gardens and crop trees develop favorably if certain irrigation rules are followed. Use of treated grey water for irrigation thus contributes to a more balanced food diet and relieves the household budget.

Keywords: Grey water; irrigation; reclamation; electro-oxidation; electro-coagulation.

1. INTRODUCTION

1.1 Grey Water

Waste water generally is made of black water and grey water. Grey water also known as sullage is non-industrial waste water generated from domestic processes such as washing dishes, laundry and bathing (Fig. 1). Grey water comprises 50-80% of residential waste water. Grey water is distinct from black water in the amount and composition of its chemical and biological contaminants (from faces or toxic chemicals).Grey water gets its name from its cloudy appearance and from its status as being neither fresh nor heavily polluted. Essentially, any water, other than toilet wastes, draining from a household is grey water. Although this used water may contain grease, food particles, hair and any number of other impurities, it may still be suitable for reuse [1,2,3].

1.2 Composition of Grey Water

The composition of grey water from its various sources is clearly illustrated in (Table 1).

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Chapter 14
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Restoration of Koolipalayam Reservoir by Using Bioclean STP Technology in Tirupur District, Tamilnadu

S. Mohan[1], N. Muralimohan[2*] and P. Tamilchelvan[3]

DOI: 10.9734/bpi/etert/v5

ABSTRACT

This study revealed a poor situation for the lack of water bodies and the available water bodies being polluted by dying unit effluents and other harmful industrial effluents being let out into the available water source due to lack of waste disposal units. The demand for water in and around Tirupur region is very high as the water bodies are very few in number even the available water bodies are being polluted by dying unit effluents and other harmful industrial effluents being let out into the available water source due to lack of waste disposal units. This Kollipalayam reservoir has been a home for several inland and migratory birds for centuries. The water source is the Nallar River, flowing from the Avinashi big Tank and few sewage canals, carrying the effluents and sewage from Tirupur town. Eventually the water level has never come down due to the above sources. The flora and fauna of this tank attracts as many as 135 species of birds from all over. Inland birds like Spot-billed Pelicans, Painted Storks, and etc. It also brings in a huge number of species from other parts of the World during the winter. Starting from November, every year, various birds flock in to kollipalayam reservoir and spend their winter and leave back to their home by the end of March. Bio-Ozolyte Technology has been implemented to treat and restoration the water in the reservoir. In this technology involves three treatments they are biological treatment, Ozone treatment and Anoyte treatment. This study strongly recommends increases the dissolved oxygen level in the water and makes the water favorable for existence of organisms and fit for usage. If this reservoir is restored, all water demands in and around Tirupur can be met.

Keywords: Kollipalayam resrvoir; restoration; biodiversity; bioclean STP; bio-ozolyte; anoyte treatment.

1. INTRODUCTION

1.1 General

Lakes are the important water resources which support millions of people, but due to rapid urbanization and industrialization, many thousands of lakes adjacent to urban center has already been closed. The remaining lakes are most useful for holding domestic waste water and dumping of solid wastes and debris [1,2].

Rapid industrial development, urbanization and increase in agricultural production have led to freshwater shortages in many parts of the world [3]. The water resources of the basin remain almost constant while the demand for water continues to increase. The utilizable water resources of India are stimulated to be 1123 BCM is surface water resources and 433 BCM is ground water resources [4].

Wastewater from different industries possess different characteristics and discharging of the effluents without proper treatment into streams, rivers or an land will lead to serious consequences. There are

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Chapter 12
Print ISBN: 978-93-90149-42-1, eBook ISBN: 978-93-90149-13-1

Feasibility Studies on Removal Efficacy of Treatment of Textile Effluent Using Natural Coagulants in Erode District

N. Muralimohan[1*] and T. Palanisamy[2]

DOI: 10.9734/bpi/crdc/v2

ABSTRACT

An explorative investigation was conducted for the feasible use of natural coagulants in the treatment of textile effluent in Erode district of Tamil Nadu (India). In this article, three natural coagulants namely *Moringa oleifera*, *Tamarina indica*, *Strychonomous potatorum* of 10, 20, 40, 60 and 80 mL dosages were used to spot the suitable one as primary coagulant. Floc formation in coagulation process had been studied in the laboratory scale to determine the optimum dosage of natural coagulants. Pre and post treated textile wastewaters with natural coagulants were considered to evaluate the percentage removal efficiency on the major pollutants of concern in textile effluent such as pH, turbidity, TSS, TDS, COD and BOD. Influence of settling time of natural coagulants on the removal of physiochemical characteristics of textile effluent was studied. From the observed results, the natural coagulant *Moringa oleifera* gives better removal efficiencies with respect to turbidity, TSS, TDS, COD and BOD and appears to be suitable for textile effluent treatment in Erode district, when compared with *Tamarina indica* and *Strychonomous potatorum*. The surface morphology of the untreated textile effluent and treated textile effluent with optimum dosage of *M. oleifera*, *T. indica* and *S. potatorum* were observed by means of SEM analysis.

Keywords: Moringa oliefera; Tamarina indica; Strychonomous potatorum; textile effluent.

1. INTRODUCTION

India is the world's second major manufacturer of textiles and garments after china. The textile and garment industry in India is one of the oldest manufacturing sectors in the country and is currently it's largest. The textile and garment industry fulfils a pivotal role in the Indian economy. Especially Tamilnadu is famous for dyeing, knit wearing, silk sarees, RMG, surgical textiles and for blankets. Erode district in Tamilnadu is situated at the centre of the South Indian peninsula between 11°19.5" and 11°81.05" North latitude and 77°42.5" and 77°44.5" East longitude. Recently, it was observed that Erode district in Tamilnadu were experiencing severe environmental problems due to textile dyeing, leather tanning, paper and pulp processing, sugar manufacturing industries, *etc*.

Textile industry involves wide range of raw materials, machineries and processes to trick the required shape and properties of the final product. The main cause of generation of this effluent is the use of huge volume of water either in the actual chemical processing or during re-processing in preparatory, dyeing, printing and finishing. Textile wastewater pollutants are generally caustic soda, detergents, starch, wax, urea, ammonia, pigments and dyes that increase its BOD, COD, solid contents and toxicity [1]. The treatment methods of waste-water include activated carbon adsorption, oxidation, chemical coagulation/flocculation, electrochemical methods, membrane techniques [2,3] and biological treatment processes are frequently used to treat textile effluents. These processes are generally efficient for Biochemical oxygen demand (BOD) and suspended solids (SS) removal, but they are largely ineffective for removing color from the wastewater [4]. Depending on the waste-water

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Chapter 6
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Comprehensive Study on Removal Efficiency of Strychonomous Potatorum and Alum as Blended Coagulant for Treatment of Textile Effluent

N. Muralimohan[1*], P. Sudha[1] and T. Palanisamy[2]

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ABSTRACT

An explorative investigation was conducted for the viable utilization of Strychonomous potatorum seed powder and alum as a blended coagulant for the treatment of textile mill effluent. In this article, natural coagulant Strychonomous potatorum (SP) and conventional Coagulant Alum $Al_2(SO_4)_3$ of 10, 20, 40, 60 and 80 mg/L dosages were used. Different proportions of SP: $Al_2(SO_4)_3$ like 0:0 (P0), 10:90 (P1), 20:80 (P2), 30:70 (P3), 40:60 (P4), 50:50 (P5),60:40 (P6),70:30 (P7), 80:20 (P8) and 90:10 (P9) were used in Pre and post treated textile mill effluents. Formation of floc during coagulation process has been studied in the laboratory extent to ascertain the optimum dosage of blended coagulants and to estimate the percentage removal efficiency of major pollutants in textile mill effluent such as turbidity, TSS, TDS, COD and BOD. when compared with other dosage, from the observed results, the blended coagulant SP: $Al_2(SO_4)_3$ of 40:60 dosage ratio offers better removal efficiencies with respect to turbidity, TSS, TDS, COD and BOD and it has been suggested as an appropriate dosage for the treatment of textile mill effluent.

Keywords: Alum; Strychonomous potatorum; textile mill effluent.

1. INTRODUCTION

Waste water disposal is the major setback being face by developing countries, like India. Currently, only about 10% of the generated waste water is treated and the remnant is discharged into water bodies. India is the world's second largest producer of textiles and garments after China. Textile dyeing processes are among the most environmentally unfriendly industrial Processes, because they produce colored wastewaters that are heavily polluted with dyes, textile auxiliaries and chemicals [1]. Wastewater generated by different production steps of a textile mill have a high pH, temperature, detergents, oil, suspended and dissolved solids, dispersants, leveling agents, toxic and non biodegradable matter, color and alkalinity. Important pollutants in textile effluent are mainly recalcitrant organics, color, toxicants and surfactants, chlorinated compounds (AOX) [2]. In the past several decades, many techniques have been developed to find an economic and efficient way to treat the textile wastewater. The treatment methods of industrial wastewater include activated carbon adsorption, oxidation, chemical coagulation/flocculation; electrochemical methods, membrane techniques [3] and biological treatment processes are frequently used to treat textile effluents. These processes are generally efficient for Biochemical oxygen demand (BOD) and suspended solids (SS) removal, but they are largely ineffective for removing color from the wastewater [4]. But coagulation-flocculation is the most common chemical treatment method used for Decolourization and to achieve maximum removal of COD and TSS [5,6]. Moreover Colloid particles are removed from industrial wastewater via coagulation and the flocculation processes by using many inorganic, synthetic organic polymers and naturally occurring coagulants [7,8].

Aluminium salts are the most widely used coagulants in water and wastewater treatment all over the world. However, the studies by several workers have raised doubts about introducing aluminum into

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Contents

Chapter

Wear Behaviour of Aluminium Alloy 8011 with 4% Fly Ash Composites by Using Sensitivity Analysis

Subramaniam Magibalan

Abstract

The current research work is focused on fabrication of Aluminium Alloy 8011 with 4% fly ash composite (AA8011-4% FA) by using the stir casting method. Wear behaviour and description of the composite are evaluated in different process parameters by using a pin-on-disc at room temperature. Fly ash (FA) in the range of (4 wt. %, average micron size 10–30 μm) is included into the matrix, and its sensitivity analysis is investigated. Three level of Central Composite Design model is developed by using Response Surface Methodology equation with different process parameters via load, time and sliding velocity are separate in the range of (5–15 N), (5–15 min) and (1.5–4.5 m/s) respectively. The surface plot shows that wear rate increases with increasing load, time and sliding velocity. A sensitivity analysis is also carried out and compared with the relative impact of input parameters on wear behaviour in order to verify the measurement errors on the values of the uncertainty in estimated parameters of three inputs such as normal load, time and sliding velocity on wear rate (WR) and coefficient of friction (COF). The result shows that normal load is more sensitive than the other parameters. The variation of load causes more changes in wear rate.

Keywords: aluminium alloy 8011 (AA8011), fly ash (FA), response surface methodology (RSM), wear rate (WR), coefficient of friction (COF), sensitivity analysis (SA)

1. Introduction

Metal matrix composites (MMCs) occur as an essential category of material used in space and transportation industries. There is an inclusive in dropping the wear in demand to decrease the tradition of material properties and expenditure of energy. This controlling of wear should be considered cautiously from the idea of choosing the alloy composition, reinforcement and additionally the process techniques. The incorporation of hard reinforcement segments, particulates, fibres and whiskers has been capable of these composites through smart tribological characteristics [2, 8, 12–18].

These reinforcements will either be value-added ex-situ or created as in-situ composites within the dissolved. It is glowing well-known that in-situ supports stay

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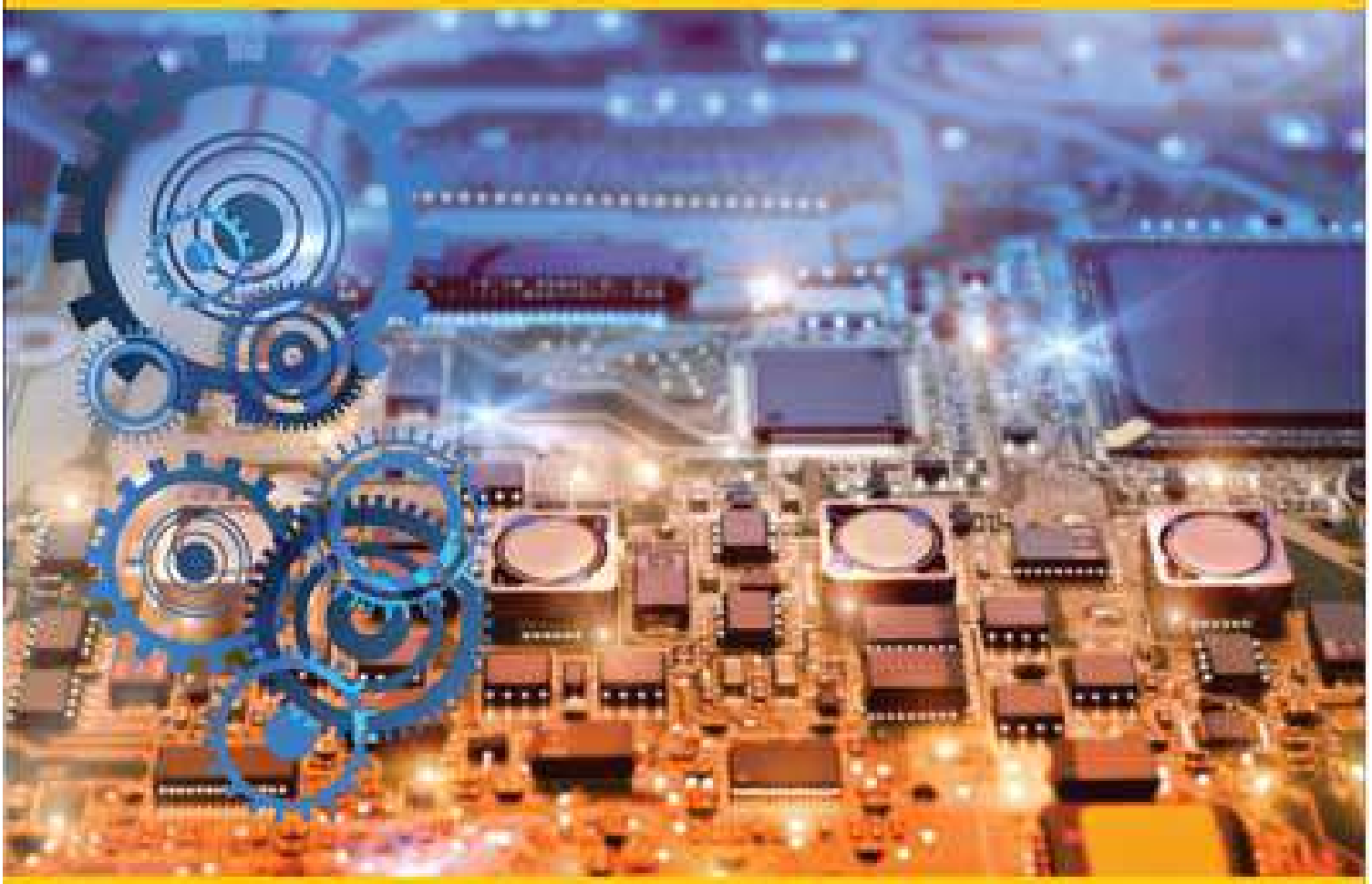

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Contents

4

Electrical Discharge Machining of Al 6061- 8% Tib_2 Metal Matrix Composite

M. Prabu[1], S. Magibalan[2], C. Senthil Kumar[3], P. Senthil Kumar[4], T. Suresh Kumar[5]

Abstract

The present work is therefore initiated to investigate the influence of some of the predominant electro discharge machining process parameters such as Current, Pulse ON-time, Flushing pressure and Vibration on the metal removal rate (MRR) and tool wear rate (TWR) on electro discharge machining of Al6061 Al alloy with 8volume percentages of titanium boride particulate (TiB_2p) composites. Response Surface Methodology (RSM) is used to identify the most important parameters to maximize the metal removal rate and minimize the tool wear rate. Experiments are designed on the basis of central composite second order rotatable design

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Experimental Studies on Fly Ash Gypsum Slurry

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Abstract

This study aimed to examine the performance of fly ash gypsum slurry in relation to the properties of its ingredients. Experiments were carried out to arrive at an optimum proportion of various ingredients for Fly ash-Gypsum slurry (F-G) mixtures having 150 mm, 300 mm, 375 mm, 425 mm and 500 mm flows. The designed mixtures were tested for flowability, density and compressive strength. The results show that even a small variation in water content drastically affected the flowablity of F-G slurry. While flowablity is mainly governed by water, observations indicated that flowablity depends on the composition of the mixture ingredients and its properties. It is understood that the minimum volume of water required for the slurry having higher flows of more than 300 mm flow is 50%. Also, it is found that almost all FG mixtures show considerable compressive strength suitable for backfilling and structural filling applications.

Key words: Fly ash, Gypsum, flowablity, Flowable Slurry, backfilling, structural filling

1. Introduction

Generally, soil backfilling is adopted to strengthen and support the foundation of a structure. Proper compaction is required more to ensure uniform and rigid filling than original soil. However, in many cases, the material is dumped into the trench, leading to poor compaction. This made the researchers use a low strength flowable material which does not require compaction. Flowable slurry or Controlled Low Strength Material (CLSM), an alternative to compacted soil fill, has been used increasingly in the construction industry as it has numerous advantages such as easy to place, strong, durable, free from settlement, free from compaction, excavatability and allows fast return to traffic. Flowable slurry is a self compacting cementitious material and it has a compressive strength of 8.3 MPa or less at the age of 28 days. Flowable slurry is mainly used in the areas of backfilling, structural filling, mining and underground construction, erosion control and pavement base. The chief benefit is that it makes use of industrial by-products [1]. *The properties of flowable slurry lie between soil and concrete.* The materials used, production and placing is similar to concrete. In service properties exhibits the characteristics of soil. Both fresh and hardened properties need to be considered to use flowable slurry for various applications.

In 1964, the U.S. Bureau of Reclamation documented the first known use of controlled low-strength material. It is perhaps the most novel material which found one of its earliest applications in the year 1964 as the bedding material for the 515 km long pipe line in the Canadian River Aqueduct project by the US Bureau of Reclamation. The use of CLSM reduced the project cost by 40% compared to that of conventional soil fill (Brewer 1994).

Flowablity is the exclusive property of flowable slurry, which facilitates the materials to be self-leveling - to flow into and fill a void and be self-compacting without the need of compacting equipment. Flowablity can be varied from stiff to fluid, depending upon the requirements. The flowable slurry is quantitatively described by its spread of flow. Similar to concrete/mortar, flowable slurry is a composite material. But it flows like a liquid. Flowablity of flowable slurry mixtures is influenced by its ingredients, quantity, and the properties of the ingredients. When flowable slurry mixtures were developed with foundry sand and fly ash, proper amount of fly ash was required to obtain desired flowablity [2-3]. Gandham indicated that flowablity mainly depends on fly ash and water content in the mixture and phospho gypsum alone does not contribute to a satisfactory flowablity [4]. Another study carried out by Nataraja et al showed that the mixture containing fly ash achieved the desired flowablity with a lower w/c ratio, compared to mixture containing rice husk ash [5]. The mixture containing quarry dust achieved the desired flowablity with lower w/c ratio compared to the mix containing sand. Use of cement kiln dust increased the water demand of flowable slurry to achieve a specific flowablity [6-7].

Jason et al. carried out an experimental study using recycled crumb rubber and native silty sand to produce lightweight, soil-based, rubberized flowable slurry for a bridge approach repair. A Fluidizing agent was added to the mixtures to improve flowablity and control bleeding. For the backfilling of a small bridge abutment, 200 mm flow was recommended, as it does not require to flow a significant distance [8]. Pierce et al pointed out that mixtures that flowed for more than 600 mm are considered unacceptable for flowable fill because the crumb rubber was segregated during the test. Rubberized flowable slurry is not flowable without the addition of sand. Fully rubberized CLSM provided poor workability [9].

FHWA (Federal Highway Administration) specifies that the density of high fly ash is in the range of 1460 kg/m^3 to 1945 kg/m^3 [10]. Charles et al reported that density of less than 800 kg/m^3 can be obtained with the use of a foaming agent for flowable fly ash slurry [11]. It has been observed that the compressive strength depends on the quantity of the cement and its water content. A cement content of about 90 kg/m^3 was required to produce a compressive strength greater than 0.345 N/mm^2 at the age of 28 days. As the water content increased compressive strength probably got reduced [11-15]. It could be said that flowablity of flowable slurry, not only depends on the amount of water but also on the composition of ingredients.

Generally, 5% of OPC and 95% of fly ash is used as a binder in flowable slurry. Amitava Roy et al and Poon et al have mentioned that ordinary Portland cement can be completely replaced by alkalies and sulphates (industrial by-product/reagent grade) to obtain a binder with similar properties. The activated fly ash by industrial by-products as a binder in CLSM will boost the large-scale utilization of both fly ash and industrial wastes [16-17].

Phosphogypsum (PG) is a by-product obtained from the phosphoric acid process in fertilizer manufacturing. Only 15% of PG is being utilized by the cement and gypsum industries as a setting moderator for cement and for making gypsum plaster. The remaining 85% of PG creates an environmental problem. Around 6 million tons of phosphogypsum, available annually in India, can be used as a resource to activate fly ash so as to conserve natural resources, protect the environment and save energy([18-19].

In this context, the present work aims to develop flowable slurry using industrial waste by-products such as fly ash and gypsum. The study examined the performance of fly ash gypsum slurry in relation to the properties of ingredients which had not been addressed in the earlier work.

2. Methodology

2.1 Materials

2.1.1 Fly Ash

Fly ash obtained from Neyveli Lignite Corporation (NLC) was used in this study. The physical and chemical properties of the fly ash were carried out using the procedure prescribed by IS 1727-1967 (R2004) and the results are presented in Tables 1 and 2.

Table 1: Physical properties of fly ash

Sl. No.	Test Conducted	Observed Values	Required As Per IS 3812 - 2003
1	Specific Gravity	2.47	-
2	Initial Setting Time (min)	45	-
3	Final Setting Time (min)	280	-
4	Consistency (%)	35	-
5	Blain's Fineness (cm^2/gm)	3550	3200 min
6	Lime Reactivity (MPa)	7.1	4.5 min

Table 2: Chemical properties of fly ash

Sl. No.	Test Conducted	Observed Values (%)	Required As Per IS 3812 - 2003
1	Loss on Ignition LOI	3.74	5 % max
2	Silica as SiO_2	35.87	25 % min
3	Iron as Fe_2O_3	4.00	--
4	Alumina as Al_2O_3 + SiO_2	34.14	50 min
5	Calcium as CaO	14.25	--
6	Magnesium as MgO	3.64	5 % max
7	Sulphate as SO_3	3.4	3 % max
8	Sodium as Na_2O	0.90	1.5 % max
9	Potassium as K_2O	0.06	--
10	Chloride	--	0.05 % max

2.1.2 Gypsum

The Phospho-gypsum used in this study was obtained from TANFAC (a fluoride industry), Cuddalore. Its specific gravity was found to be 2.70. The chemical properties of gypsum are shown in Table 3.

Table 3: Chemical properties of gypsum

Sl.No.	Chemical Composition	Observed Values (%)
1	Loss on Ignition	1.63
2	Insoluble Residue	0.5
3	Alumina as Al_2O_3	0.75
4	Iron as Fe_2O_3	0.82
5	Calcium as CaO	44.99
6	Magnesium as MgO	1.02
7	Sulphate as SO_3	48.84
8	Purity	99.4

2.2 Mixture Proportion for Flowable F-G Slurry

For the experimental investigation, five different flow series of flowable slurry mixtures were considered. The mixtures were proportioned for the flow of 150 ± 50 mm, 300 ± 50 mm, 375 ± 25 mm, 425 ± 25mm and 500 ± 25 mm. All the mixtures were proportioned to obtain flowable slurry as defined by ACI Committee 229R (2005). The gypsum content in the binder was 10% by mass of fly ash. The water content

was arrived at by trial and error method in order to obtain the desired flowablity. The details of mixtures are presented in Table 4. The F-G mixtures are designated as A, B, C, D and E.

Table 4: Mixture proportions of F-G slurry and fresh slurry properties

Sl. No	Flow Range (mm)	Mixture Designation	Mixture Ingredients				Flow/ Spread (mm)
			Fly ash (kg/m³)	Gypsum (kg/m³)	Water (kg/ m³)	W/ (FA+ G)	
1	500 ± 25 flow	A	898.1	89.8	642.0	0.65	481.0
2	425 ± 25 flow	B	941.3	94.2	621.2	0.60	420.0
3	375 ± 25 flow	C	1053.4	105.3	579.4	0.50	391.0
4	300 ± 50 flow	D	1188.2	118.8	522.8	0.40	274.0
5	150 ± 50 flow	E	1366.6	136.7	451.0	0.30	185.0

2.3 Preparation and Testing

The calculated quantity of fly ash and gypsum were mixed in dry condition for about five minutes. The required quantity of water was slowly added and mixing was continued for another five minutes. Flow test as per ASTM D 6103 was carried out and fresh slurry density determined. The freshly prepared F-G slurry was tested for wet density. Cube specimen of 50 mm was used for determining the density of hardened F-G slurry. Cubes were de-moulded after 24 hours and humidity cured, until testing. Twelve specimens were prepared, cured and tested for each mixture. The test was carried out using 2000 kN compression testing machine. The load was applied on each specimen till its failure. The Ultimate load applied over a specimen that caused failure was noticed and recorded. The compressive strength was estimated using the equation

$$\text{Compressive strength} = P/A \quad (1)$$

where, P = Ultimate load in kN;

A = Cross sectional area of cube in mm^2

3. Results and discussion

Fly ash gypsum slurry is characterized by its properties like flow, density and compressive strength. This part presents the results of the laboratory investigations and the observations made thereof.

3.1 Flow Test of F-G Slurry Mixtures

Flow of fly ash gypsum (F-G) slurry is an important property. Therefore, it is essential to understand the influence of F-G slurry ingredients on flow behaviour. Water is the predominant ingredient which influences the spread of the slurry. The quantity of water required to obtain a desired flow depends primarily on the quantity of fly ash, and gypsum in the mixture. The attempt made to understand the relationship between volume of solids and flowablity is presented below.

F-G slurry consists of fly ash, gypsum and water. It is considered as a system consisting of only two prominent phases, namely, solids and liquid. Totally, five mixtures were made with flowability values of 150 mm, 300 mm, 375 mm, 425 mm and 500 mm. Experiments were carried out to arrive at the optimum proportions of ingredients for each mixture. The quantity of water required, relative ratios (RR) as well as successive relative ratio (SRR) of each flow are presented in Table 5. It is evident from the Table that the RR value of flow varies in the range of 1 to 1.42. However, the RR value of water varies from 1 to 1.42. It is evident that the RR value of F-G slurry with 500 mm flow increased three fold while the relative ratios

(RR) of water increased only 42%. This indicates that the flow of slurry is highly sensitive even to the little variations in water content. Also, it has been substantiated with computed successive relative ratios of flow and water. The SRR of flow varies in the range of 1.13 to 2.0, while corresponding values for water requirement varies in the range of 1.03 to 1.16. It is also observed that mixtures with higher flow are more sensitive to even marginal variation in water content than mixtures with low flow.

Also, for better understanding rheology of slurry, quantities of ingredients such as fly ash, gypsum and water are converted from mass to volume and presented in Table 6. It is inferred that the minimum volume of water required for the slurry having higher flows (more than 300 mm flow) is 50%. It is obvious that the water requirement increases with increase in flowability and thereby the content of solids gets reduced in the mixture.

Table 5: Water requirement of F-G slurry mixtures

Sl. No	Mixture Designation	Flow Variation			Water Requirements		
		Flow Range (mm) (x_1)	Relative Ratio (x_1/150)	Successive Relative Ratio	lit / m³ (y_1)	Relative Ratio (RR)*	Successive Relative Ratio**
1	A	500	3.33		642	1.42	
2	B	425	2.83	1.17	621	1.37	1.03
3	C	375	2.5	1.13	579	1.28	1.07
4	D	300	2	1.25	523	1.16	1.1
5	E	150	1	2	451	1	1.16

* RR = y1 / water requirements of corresponding filler having 150 mm flow

**SRR- 1.42/1.37=1.03 and so on..

Table 6: Phase system in F-G slurry mixtures

Sl.No	Mixture Designation	Flow Range (mm)	Volume of Fly Ash (%)	Volume of Gypsum (%)	Volume of Total Solids (%)	Volume of Water (%)
1	A	500	35	3.2	38.2	61.8
2	B	425	36.8	3.3	40.1	59.9
3	C	375	40.8	3.6	44.4	55.6
4	D	300	45.9	4.1	50	50
5	E	150	52.4	4.7	57.1	42.9

3.2 Density of F-G Slurry

The density of slurry depends on the type of ingredients present and their proportions. Generally, it will have a bearing on the yield, strength, durability and also shrinkage. Density of fresh slurry (wet density) and hardened slurry of all mixtures were determined and presented in Table 7. The wet density of F-G slurry is varying from 1620 kg/m³ to 1920 kg/m³., whereas, the dry density is in the range of 1600 kg/m³ to 1900 kg/m³. It is obvious that density increases both in fresh as well as hardened slurry with the increase in the volume of solids. A marginal reduction in density of wet slurry is noticed, on hardening. It is due to the evaporation of water from slurry during the hardening process. However, the loss of water has resulted in only a marginal reduction in yield of slurry. The yield of slurry is the hardened unit mass of the flowable slurry that could be obtained after the slurry settles and hardens at ~~the~~ ambient temperature. The results are in conformity with the reported density of slurry [10-14]. The reported density is in the range of 1460 kg/m³ to 1945 kg/m³.

Table 7: Density of fresh and hardened F-G slurry mixtures

Sl. No	Mixture Designation	Flow Range (mm)	Volume of Total Solids (%)	Wet Slurry Density (kg/m³) (x)	Hardened Slurry Density (kg/m³) (y)	Yield of the Slurry, (y/x) * 100
1	A	500	38.2	1620	1600	98.8
2	B	425	40.1	1730	1700	98.3
3	C	375	44.4	1850	1800	97.3
4	D	300	50	1900	1890	99.5
5	E	150	57.1	1920	1900	99

x - Wet Slurry Density (kg/m³); y - Hardened Slurry Density (kg/m³)

Also, an attempt has been made to compare the observed and the computed density of FG. The Density of the slurry in the hardened state is essential to compute the quantity of the materials required for a particular application. In order to compute optimum quantity of water required for the slurry for a specific application, an attempt has been made to arrive at an expression. Generally, dry density is computed using the following expression (1).

$$\text{Dry Density } (\gamma_d) = \frac{\gamma}{1 + w} \quad (2)$$

where γ_d – dry density in kg/m³

γ – wet density in kg/m³

w–water content (ratio of the weight of water to the weight of solids)

The above expression has been modified based on several laboratory trials to obtain **the** computed hardened density. The modified expression is presented below (2)**:**

$$\text{Computed Hardened Density } (\gamma_{cd}) = \frac{\gamma}{1 + w/100} \quad (3)$$

where γ_{cd} – dry density in kg/m³

γ – wet density in kg/m³

w–water binder ratio (ratio of **the** weight of water to the weight of binder)

The computed and observed densities are presented in Table 8. It is observed that the computed density of hardened slurry is in agreement with the measured densities. The maximum deviation of computed density from measured density is only 2%. The above expression can be used effectively to arrive at the optimum quantities of materials to obtain the required hardened density.

Table 8: Comparison between the observed and the computed hardened density of F-G slurry mixtures

Sl. No	Mixture Designation	Flow Range (mm)	Wet Slurry Density (kg/m³)	Observed Hardened Slurry Density (kg/m³) (x)	Water/ Binder Ratio W/(FA+ G)	Computed Hardened Density (y)	Computed / Observed Hardened Density (y/x)
1	A	500	1620	1600	0.65	1609.5	1.01
2	B	425	1730	1700	0.6	1719.7	1.01
3	C	375	1850	1800	0.5	1840.8	1.02
4	D	300	1900	1890	0.4	1892.4	1.00
5	E	150	1920	1900	0.3	1914.3	1.01

x - Wet Slurry Density (kg/m³); y - Hardened Slurry Density (kg/m³)

3.3 Compressive Strength of F-G Slurry

The cured specimens of various F-G slurry mixtures were tested for compressive strength at the age of

3, 7, 28 and 56 days. The test results are furnished in Table 9. The compressive strength mainly depends on the type of binder and the mixture proportion of ingredients used in slurry. ACI 229 R 2005 specified a compressive strength of maximum 8.3 MPa or less at the age of 28 days for controlled low strength material (CLSM). However, it has been reported in the literature that fly ash gypsum flowable slurry was made even with 10 MPa compressive strength (Gandham et al 1996). At the same time, fly ash slurry was also made with a compressive strength as low as 0.34 MPa (Naik et al 1990). The minimum compressive strength of 0.34 MPa can be used when later age excavatabilty of the flowable slurry is predicted. It shows that fly ash slurry can be produced with a wide range of strengths depending on requirements.

The compressive strength of F-G slurry is varying from 1.7 MPa to 5.61 MPa at the age of 28 days. Hence, the F-G slurry produced in the present study can be considered as controlled low strength material. It is noticed that the compressive strength at all ages improved with an increase in the volume of solids. It is obvious that the increased volume of solids reduced the volume of water in slurry. This in turn improved the compressive strength of hardened slurry. The compressive strength gradually decreased with increase in the flow of slurry from 150 mm to 500 mm. Similar observations were made on flowable slurry by FHWA (1998), Krell.(1989), and Naik et al (1990, 2003). However, significant reduction in strength is noticed in the slurry having flowability greater than 375 mm. It must be due to the addition of much more water than the optimum quantity of water required for the hydration of the binder.

Table 9: Compressive strength of F-G slurry mixtures

Sl. No	Mixture Designation	Flow Range (mm)	Volume of Solids (%)	Compressive Strength at Various Ages (MPa)			
				3 days	7 days	28 days	56 days
1	A	500	38.2	1.43	2.01	2.36	2.72
2	B	425	40.1	0.36	1.41	1.70	3.10
3	C	375	44.4	2.62	3.72	5.00	5.70
4	D	300	50	2.96	4.19	5.41	5.90
5	E	150	57.1	3.20	5.60	5.61	6.50

4. Conclusions

This article presents a study carried out to evaluate the behaviour of F-G slurry. From the results and discussion the following conclusions are drawn:

The relative ratios and successive relative ratios of flow are significantly higher than the water requirement for F-G slurry. It shows that even a small variation in the water content drastically affects the flowability of slurry. Also, the mixtures with higher flow are much more sensitive to even marginal variation in the water content than the mixtures with low flowability. Further, it is noticed that a minimum of 50% volume of water is required for F-G slurry having flowability higher than 300 mm.

The wet and hardened density of FG slurry is in the range of 1620 to 1920 kg/m^3 and 1600 to 1900 kg/m^3, depending on the respective quantity of solids. The marginal reduction in the density of wet slurry is noticed, on hardening, in F-G slurry. It is due to the evaporation of water from slurry during hardening process. FG slurry mixes considered in the present study can be classified as regular flowable slurry, based on their density, as the density of all of the mixtures is more than 800 kg/m^3.

The compressive strength at all ages improved with the increase in the volume of solids and reduction in flowability. Also, it is found that almost all FG slurry mixtures have shown compressive strength ~~varies~~ varying from 1.7 MPa to 5.61 MPa, at the age of 28 days, depending on the flow of mixtures. However, ~~the~~ considerable reduction in strength is noticed in the slurry having flowability greater than 375 mm. It must be due to the addition of much more water than the optimum quantity of water required for the hydration

of the binder.

The strength obtained for all the mixes are below 8.3 MPa, as specified by ACI 229 R. Therefore, it satisfies the strength requirement of flowable slurry. Also, all the mixes can be used as structural fills as the strengths of the mixes are between 0.69 to 8.3 MPa.

5. References

1. ACI Committee 229 R. (2005) 'Controlled Low Strength Materials (CLSM)'– ACI Concrete International Vol. 16, No.7, pp.55-64.
2. Bhat S.T. and. Lovell C.W. (1996) 'Design of Flowable Fill: Waste Foundry Sand as a Fine Aggregate' – Transportation Research Record No. 1546, pp 70-87.
3. Bhat S.T. and. Lovell C.W. (1997) 'Mix Design for Flowable Fill', Transportation Research Record, No. 1589, pp. 26-35.
4. Charles K.N., Frances McNeal and Dean Martin (1997) 'New Foaming Agent for CLSM Applications', Concrete International, Vol. 19, No. 4, pp. 44-47.
5. FHWA-RD-97-148 (1998) 'User Guidelines for Waste and By-Product Materials in Pavement Construction', U.S. Department of Transportation, Federal Highway Administration, Turner-Fairbank Highway Research Centre.
6. Gandham S. Seals R.K. and Foxworthy Paul.T. (1996) 'Phosphogypsum as a Component of Flowable Fill' – Transportation Research Record No.1546, pp.79-87.
7. Jason Y. Wu. and Mufan. Tsai. (2009) 'Feasibility Study of a Soil-Based Rubberized CLSM' –Waste Management Vol 29, No.2 pp. 636-642.
8. Krell William C. (1989a) 'Flowable Fly ash', Transportation Research Record No. 1234, pp. 8-12.
9. Lachemi M. Hossain K.M.A. Shehata M. and Thaha W. (2007) 'Characteristics of Controlled Low-Strength Materials Incorporating Cement Kiln Dust' – Canadian Journal of Civil Engineering, Vol. 34, No 4, pp.485-495.
10. Lachemi M. Hossain K.M.A. Shehata. M. and Thaha.W. (2008) 'Controlled Low Strength Materials Incorporating Cement Kiln Dust from Various Sources' – Cement and Concrete Composites, Vol. 30, No.5, pp.381-392.
11. Naik T.R., Ramme B.W. and Kolbeck H.J. (1990) 'Filling Abandoned Underground Facilities with CLSM Fly ash Slurry', Concrete International, Vol. 12, No. 7, pp. 19-25.
12. Naik T.R., Kraus R.N., Ramme B.W., Yoon-Moon Chun and Rakesh Kumar (2006) 'High-Carbon Fly Ash in Manufacturing Conductive CLSM and Concrete', Journal of Materials in Civil Engineering, Vol. 18, No. 6, pp.743-746.
13. Nataraja M.C. and Nalanda Y. (2008) 'Performance of Industrial By-Products in Controlled Low-Strength Materials (CLSM)', Waste Management, Vol. 28, No. 7, pp. 1168-1181.
14. Pierce C.E. and Blackwell M.C (2003) 'Potential of Scrap Tire Rubber as Lightweight Aggregate in Flowable Fill' – Waste Management Vol. 23 No.3, pp.197-208.
15. Ramme B.W., Naik T.R. and Kolbeck H.J. (1994) 'Use of Fly Ash Slurry for Underground Facility

Construction', Construction and Building Materials, Vol. 8, No. 1, pp. 63-67.

16. Amitava Roy, Paul Schilling, Eaton Harvill C. and Seals Roger K. (1992) 'Alkali Activation of Class C Fly Ash', Proceedings of Utilization of Waste Materials in Civil Engineering Constructions, ASCE National Convention, New York, Sept. 13-17, pp. 104-115.

17. Poon C.S., Kou S.C. Lam L. and Lin Z.S. (2001) 'Activation of Fly Ash/Cement Systems using Calcium Sulfate Anhydrite $CaSO_4$)' – Cement and Concrete Research, Vol. 31, No. 6, pp. 873-881.

18. Mridul Garg Manjit Singh and Rakesh Kumar (1996) 'Some Aspects of the Durability of a Phosphogypsum-Lime-Fly Ash Binder' – Construction and Building Materials, Vol. 10, No. 4, pp. 273-279.

19. Manjit Singh (2007) 'Utilization of Waste Gypsum; An Indian Scenario' – Global Gypsum Magazine, pp. 22-28.

20. IS: 1727 – 1967 (R2004) Indian Standard Methods of Test for Pozzolanic Materials, The Bureau of Indian Standards, New Delhi.

21. IS 3812: Part 1: 2003 – Pulverized Fuel Ash - Specification - Part 1: For Use as Pozzolana in Cement, Cement Mortar and Concrete, The Bureau of Indian Standards, New Delhi.