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Exergy Analysis of Gautami Combined Cycle Power Plant, India: A Case Study

Authors Venkata Ravi Ram Pinninti, TVK Bhanuprakash, Ramamurthy Dwivedula, Rama Jonnada

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Description The continual need to optimize costs and the recent competitive pressure from renewables have seen renewed focus on improving and optimizing plant components' efficiency. Combined cycle power plants are better from thermal efficiency point of view compared with coal-based power plants. Exergy analysis offers better alternative to energetic analysis based on simpler model of energy balance only. Identifying system energy losses is easier using exergy analysis, making it a better analytical tool. The paper presents a case study of exergy analysis of Gautami combined cycle power plant. Component level theoretical analysis is done first and applied to the operational data from the plant. The results showed that the gas turbine combustion chamber has the highest exergy loss of 33%. Impact factors like ambient temperature, pressure ratio, turbine inlet temperature and heat recovery steam boiler are also ...

Ramamurthy Dwivedula

A Six Sigma Case for Process Optimization in Water Treatment Plant.

Authors: Vijaya Bhaskar Krovvidi, Venkata Ravi Ram Pinninti, Ramamurthy Dwivedula

Publication date: 2019/8/1

Journal: IUP Journal of Operations Management

Volume: 18

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Description: Water is an essential commodity and in many instances, needs to be treated before it becomes fit for consumption either by humans or industries. Water treatment thus is one of the most common processes that is used across many sectors like municipalities, power plants, petrochem plants and process plants that use water either directly for drinking purpose and fire protection systems, or indirectly as in cooling systems as input for further processing like demineralization. Originally conceived and implemented at Motorola as an improvement tool for manufacturing industry, Six Sigma is a set of proven methods that have found widespread implementation and have successfully optimized processes even in the service sector. This paper is a case research which presents the implementation of the Six Sigma methodologies like DMAIC and SIPOC over a period of one year, in the context of minimizing process costs of a ...

2020-07-29

Study of Parametric Influence on Dry Sliding Wear and Corrosion Behavior of AA5754-TiB $_2$ In Situ Composites 05-13-03-0021

This also appears in SAE International Journal of Materials and Manufacturing-V129-5EJ

Tribological properties determine the elemental factors influencing the performance of the components that are subjected to relative motion. Of late, low-density Metal Matrix Composites (MMCs) have been renowned as materials for the components that are subjected to tribological applications. This work reports an experimental study of wear and corrosion behavior of Aluminum Metal Matrix Composites (AMMCs) reinforced with in situ TiB_2 particles. These composites were synthesized by a mixed salt route procedure using K_2TiF_6 and KBF_4 at a temperature of 850°C by using the stir casting method. Dry sliding wear behavior of AA5754-TiB_2 in situ composites were compared with base material for the various loads, sliding speed, and sliding distances. These parameters were analyzed using Taguchi techniques. It was found that the percentage of reinforcement and load are the most significant parameters. Scanning Electron Microscopy (SEM) analysis was conducted on wear scars to find the wear mechanism. The corrosion behavior of in situ composites has been studied and compared with the base material. Potentiodynamic polarization tests were carried out to determine the corrosion resistance.

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Tribological studies of different bioimplant materials for orthopedic application using Taguchi experimental design

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ABSTRACT

In this research ball on disc wear tests have been carried out with ASTM G-99 standard at room temperature in simulated body fluid. The tribological property such as the coefficient of friction and wear weight loss was studied by using the Taguchi design of experiments. The design of the experiment was done using L8 orthogonal array to determine the collective contribution of the wear parameters. An analysis of variance demonstrated that the individual contribution of type of material factor was 97.15% and 66.66% for the coefficient of friction and wear weight loss respectively, which is the highest individual contribution as compared to other factors. It was concluded that the coefficient of friction and wear weight loss is mainly influenced by type of material factor. The analysis of the signal-to-noise ratio shows that the optimal coefficient of friction and wear weight loss was obtained with CoCrMo material at an applied normal load of 5 N with a sliding velocity of 0.05 m/s for a track diameter of 30 mm. To check the accuracy of results a confirmation test was carried out which indicates that predicted values are very close to the experimental values and the model is significant to predict the coefficient of friction. The results showed that the coefficient of friction and wear weight loss increases with increasing the applied load and sliding velocity. The microstructure of all substrates materials was analyzed using a scanning electron microscope. Wear track study showed that adhesive dominant wear mechanism for all four different substrate materials.

Keywords: Analysis of variance, Coefficient of friction, Pin on disc, Regression equation, Signal to noise ratio, Weight loss

1. Introduction

For improvement of research in the field of biomaterials engineering, it is necessary to study the tribological behavior of the material to improve the existing used biomaterials otherwise for the development of new virgin materials with exceptional properties [1]. Generally, the metal alloy has been used largely in the manufacturing of orthopedic implants. The highest quality and top superiority of orthopedic implants and instrumentation along with feasible cost are the demand of the 21st-century world. For safe and effective use of orthopedic implants that are left in vivo for a long period, it is necessary to study the tribology, mechanical and biological properties of orthopedic bio implant substrate materials. Implant materials subjected to sliding and rubbing contact action, the poor wear resistance material generates the wear debris which causes inflammation and pain at the joint. Wear is explained as the "loss of material in particulate form as a consequence of relative motion between two surfaces" [2]. Several factors contribute to the long-term survivorship in vivo of a biomedical implant. Out of this wear can be a major influencing factor for the proper performance of orthopedic bioimplant materials in an actual condition [3]. Bone and bone tissue suffer substantial loads during physical activity of the human body so it is mandatory to have a better load-bearing characteristic of artificial implants. Load-bearing orthopedic bioimplants material like knee and hip joints are made from stainless steels or titanium alloys because of their better corrosion and mechanical properties [4- 5]. Ti-based alloys an important bioimplant material that is generally used in total hip joint replacement. These alloys when compared with Co-28Cr-6Mo exhibit more wear which is primarily due to abrasion and cracking [6]. For better durability in the human body, the superior wear mechanism and surface modification process was suggested for orthopedic implant material for long life and proper work functionality [7]. Generally, the modes of failure in engineering materials are corrosion failure, fatigue failure and wear failure, and wear failure is more prevailing in joint prostheses [8, 9, 10]. The tribological properties of material like wear rate, wear mechanism largely depends upon the manufacturing process of alloys. The heat treatment methods have more influence on the performance of bioimplant alloys [11]. So for the effectiveness of bioimplant material in the living body, it is necessary to study all aspects of bioimplant

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Numerical Analysis of Heat Transfer Enhancement in the Single Pipe Heat Exchanger with Helical Enclosure (He) Under Constant Wall Temperature

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***Abstract*— In this investigation the heat transfer mechanism based on the temperature slope among two dissimilar geometry of helical inserts with both cases of distinct nominal pitch lengths& angels and latitudinal lengths at the condition of constant wall temperature. Enhancement of inter changing of heat between wall to flowing fluid in the SPHE.in most of cases generally heat transfer done between two fluids but here its self-wall surface and fluid interface. The outlet temperature of the fluid drops suddenly when the Reynolds number increases rapidly 6500 with HI-B compared to HI-A. un predictable of first case through length and other case middle portion of inserts prescribed size of pitch length and pitch angle at preeminent temperature. also, the Nusselt number and heat transfer coefficients are significantly changed due to the constant wall temperature condition in the continues heat exchanging mechanism.**

***Keywords*— Single pipe heat exchanger (SPHE), Reynolds number (Re), Nusselt number (Nu), heat transfer coefficient (HTC), helical inserts (HI).**

NOMENCLATURE

Symbol	
h	*heat transfer coefficient [W/m². K]*
$\dot{m}$	*mass flow rate [kg/sec]*
C_p	*specific heat of water [J/kg. K]*
ΔT_o	*cold water temperature difference [°C]*
Ai	*inside area of tube [m]*
di	*inner diameter of tube [mm]*
L	*length of the pipe [mm]*
T_s	*wall surface temperature [°C]*
$(T_s\text{-}T_w)_a$	*average temperature gradient [°C]*
$(Ti+Te)/2$	*Bulk mean temperature [°C]*
Re	*Reynolds number [-]*
Pr	*Prandtl number [-]*
Nu	*Nusselt number*
V	*velocity of fluid [m/sec]*
Φ	*pitch angle [-]*

1. INTRODUCTION

Significant increase in efficiency of heat exchangers, can be realized with enhancement in heat transfer coefficient of fluid. The augmentation is classified into three main techniques: active, passive, and compound. The active techniques require an external force such as electric field, acoustic or surface vibration. The passive technique involves fluid additives, special surface geometries, or swirl flow devices, that is, twisted tape inserts. On the other hand, the compound techniques are created by a combination of two or more passive and/or active. Many researchers used the passive device to achieve enhancement in heat transfer by its hassle-free use. Inserts increase residence time and generate swirl effect of fluid flow in the test section of tube causing vortex mixing of fluid particles. An attempt is made in the present study investigate enhancement of heat transfer in a single pipe with helical inserts of different diameter and length in the laminar to turbulent fluid flow region. Detailed experimentation was carried out with single and double strip helical screw tapes in a copper by **Shashank Ranjan Chaurasia** [3] they conducted that combining the effect of nanofluids and the effect of swirl created by insert would cumulatively augment the heat transfer coefficient. **M.R. Salem et al** [4] investigated heat transfer enhancement using continues helical tape inserts with varying pitch to diameter ratios and ratio of height to clearance between two pipes. Heat transfer enhancement with inserts was observed to be 70 to 164%when clearance was 0.275 to 1. Nusselt number increases of 1.77 times with helical inserts as compared to plain double pipe heat exchanger was indicated by **Khashayar Sharifi** [5]. **Anas El Maakoul** [6] carried out experimentation at varying Reynolds number and baffle plate spacing in a double pipe heat exchanger. Their results showed increased heat transfer from 5 to 45%when baffle spacing is reduced from 100to 25mm.multi objective optimization, NSGA-II is utilised by **M. Sheikholeslami et** [7] for forced convection heat transfer analysis using thermal performance was maximum i.e., 1.59for Re 6000and open air ratio of 0.05. **Niwat Piriyarungroj** [8] investigated numerically the heat transfer enhancement and friction factor is a tube under constant wall temperature. It was observed that heat transfer and pressure loss increase with open air ratio when inserts one inserted in the fit tube. **Sami D. Salman** [9] carried out numerical analysis of heat transfer in a circulated tube with twisted tape inserts under constant wall heat flux and laminar flow condition. Their results indicated increased heat transfer with decreases tube ratios and increase of Reynolds number. **M.M.K. Bhuiya** [10] in the double helical inserts under

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SECURED WIRELESS DATA ENCRYPTION USING ARM7

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ABSTRACT:

Nowadays confidential data transfer is a crucial task in many multinational companies, military departments, intelligence and surveillance departments, and so on. Unsecured data that travels through different networks are open to many types of attack and can be read, altered or forged by anyone who has access to that data. In such departments and companies' lots of efforts are put forth for securing confidential data. To prevent such an attack, data encryption and decryption technique is employed. In order to visualize the effect and evaluate the performance of the encryption and decryption of each technique used in communication systems. There are many different forms of protection mechanisms like LSB, Masking and filtering and Transform techniques. All of them have respective strong and weak points. Therefore, they need Data encryption and decryption for their applications. In this a new software techniques are used for encryption as well as decrypt data . The project aims to establish two-way wireless communication between two nodes with the help of ZIGBEE technology. The LPC2148 micro controller plays as a major role for encryption. The alarm will be alert when arrival of new data reception and Led's indications also used for understanding the communication between two nodes. Our proposed scheme provides better performance than protection mechanisms like LSB, Masking techniques in the term of execution time and total memory requirement.

Keywords: LPC2148, ZIGBEE, Encryption, Decryption.

I. INTRODUCTION

The role of computers and networks in our everyday lives has made protecting data and adding security an important issue. A wireless network is any type of computer network which is using wireless data connections to connect network nodes. Wireless networking is a method by which domestic, telecommunications networks & enterprise installations avoid costly process of introducing cables in a building. Because a connection among different equipment locations. Wireless telecommunications networks are generally implemented & administered using radio communication. Such implementation takes place at physical level of Open System Interface model network structure. The examples of wireless networks consist of cell phone networks. Wireless local networks, wireless sensor networks, satellite communication networks, & terrestrial microwave networks.

Most data transmitted over a network is sent in clear text making it easy for unwanted persons to capture and read sensitive information. Encryption is one specific element of cryptography in which one hides data or information by transforming it into an undecipherable code. Encryption typically uses a specified parameter or key to perform the data transformation. Encryption algorithms protect data from intruders and make sure that only the intended recipient can decode and read the information. Encryption is simply the translation of data into a secret code, and it is considered the most effective way to ensure data security. To read an encrypted file, you must have access to a secret key or password that enables you to decrypt it. Modern encryption is achieved using algorithms with a "key" to encrypt text or other data into digital nonsense and then decrypting it by restoring it to its original form. Encryption is most used among transactions over insecure channels of communication, such as the internet, automatic teller machines (ATMs), mobile telephones, and many others. Encryption can be used to create digital signatures which allow a message to be authenticated [2]. Decryption is an opposite of encryption which transforms the encrypted data into original form. The block diagram in Fig 1 shows

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IOT BASED COLLEGE BUS TIMING PREDICTION USING GSM AND GPS MODEM

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ABSTRACT

This paper presents the bus monitoring system by using GSM and GPS. The current design is an embedded application, which will continuously monitor a moving Vehicle and report the status of the Vehicle on demand. For doing so an Arduino is interfaced serially to a GSM Modem and GPS Receiver.A GSM modem is used to send the position (Latitude and Longitude) of the vehicle from a remote place.The GPS modem will continuously give the data i.e. the latitude and longitude indicating the position of the vehicle.The GPS modem gives many parameters as the output, but only the NMEA data coming out is read and displayed on to the LCD.The hardware interfaces to microcontroller are LCD display, GSM modem and GPS Receiver The design uses RS-232 protocol for serial communication between the modems and the microcontroller. A serial driver IC is used for converting TTL voltage levels to RS-232 voltage levels. This paper proposes a system to track bus using GPS.tell the umber of passengers in the bus. Despite it has a switch in case of any emergency if the switch inside the bus is pressed an sms will send to respective user.

Keywords: *Internet Of Things, GSM, GPS ,IR sensors ,college transport and NMEA.*

I) INTRODUCTION

Now a Days the buses are important in the daily routine. Most of the peoples are traveling by the buses but some time it is take a too much time to reach the destination because the traffic, engines problems. To solve this issue the bus monitoring system using real-time GPS location is required. This bus monitoring system is providing the real-time locations and roots of travel. The use of mobile devices has become a part of our daily routine. Now the Bus Tracking systems are mostly widely used as compared with the previous years[1].

The count of passengers in bus it will increase the trustworthiness in the public transport. This paper proposes a system to track public bus using GPS (Global Positioning System), tell the count of number of passengers in bus and also the estimated time arrival to the user. The Location of Bus can be tracked by public using Android Application[2]. Tracking of organization buses while moving on highway is a crucial task.

A person patiently waiting for the bus may want to enquire about the position of current location of the bus. Phone discussion is not always possible due to traffic disturbances. Further it involves variant costs due to the calls and message service over phone and the person in the bus may get annoyed if he gets multiple calls from people boarding that bus. Mobile based Bus Tracking System provides a solution to this problem which helps anyone to retrieve the location of the bus without calling or disturbing the person travelling in the bus.

The people boarding the bus and the coordinators of the bus should own an android driven mobile phone with internet connectivity. The Global Positioning System (GPS) supports in area following with backing of Global Standard for Mobile (GSM) in cellular telephone to report transport area information again to the servers. Continuously, this shows where transports are on a guide and evaluation the entry time and separation with reference to holding up stop by utilizing propelled gimmicks of Internet. The function of proposed system is to provide an economical, flexible and reliable system for bus tracking[3]

RF LOW NOISE AMPLIFIER DESIGN FOR 2.4GHz ISM BAND APPLICATIONS

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Abstract: This paper presents the design and analysis of low power RF low noise amplifier for ISM band wireless applications. Source degeneration technique is using for impedance matching; cascode common source amplifier is for gain improvement. Inductive load is placed at the output of LNA to achieve impedance matching. The LNA achieves the input reflection coefficient(S_{11}) -20.89dB, gain (S_{21}) of 20.42dB, Noise Figure of 0.68dB. The practical input resistance of the proposed circuit is 44.96Ω while consuming 1.53mW static power dissipation at 2.4GHz ISM band frequency.

Index Terms: Cascode Amplifier, Noise Figure, Impedance Matching, Dual Band, Source Degeneration.

I. INTRODUCTION:

A CMOS reconfigurable LNA is implemented using switched inductors and varactors, performs continuous frequency tuning from 2.4 to 5.4 GHz. Switching transistor is used to provide variable gain control over a 12dB-range. The LNA supports standards including Bluetooth, WiMAX [1]. An inductor less LNA was operating in the frequency range between 200MHz and 3.8 GHz to cover the first two WiMAX bands namely 2.5GHz to 2.9GHz and 3.4GHz to 3.6GHz. Its low power consumption as well as its compact size, inductor less, permit portability and make it right for the rapidly developing IEEE 802.16e standard. Another design uses inductive shunt peaking along with the load capacitance to achieve a bandwidth of up to 6.2 GHz to cover the three bands including 5.2GHz to the 5.9GHz band[2]. A low-noise, low-distortion CMOS wide-band amplifier that matches a capacitive source is represented using CMOS technology, optimal noise matching with a capacitive antenna in the entire AM frequency band is possible so that better noise performance is achieved compared with the bipolar realization [3].

The quality factor of passive tuned circuits influences the circuit power dissipation. The use of high-quality inductors in the design of LNA lowers the power dissipated in tuned RF circuits[4]. The strong demand for wireless products, a greedy desire for spectrum that pushes carrier frequencies ever upward, and the constant quest for higher performance at lower power and cost, have recently driven the development of radio frequency integrated circuit (RF IC) technology in unprecedented ways. These pressures are stimulating novel solutions that allow RF ICs to enjoy more of the benefits of Moore's law that has been the case in the past. In addition to regular raw transistor speed increases, the growing number of interconnect layers allows the realization of improved inductors, capacitors, and transmission lines. A deeper understanding of noise at both the device and circuit level has improved the performance of low noise amplifiers[5].

A CMOS low noise amplifier has designed for application in a 3.1GHz to10.6GHz ultra wideband radio-frequency (RF) receiver system [6]. A wideband pass multistage RF amplifier using a cascade of a three-segment bandpass LC section filter with a common gate stage is using for RF front end[6]. Wideband input impedance matching can be obtained using resistive shunt feedback in combination with a parallel LC load to make the input network equivalent to two branches[7]. The complementary topology is merged with unbalanced inductive source degeneration to attain broadband input matching while preserving low noise figure [8].

A 90 nm CMOS low noise amplifier for 3 to 10GHz ultra-wideband (UWB) applications is designed based on a current-reuse technique and performs UWB (3–10 GHz) input matching and cascode amplifier with resonant load is used to improve the gain and reverse isolation [9]. A new technique is used to enhance the ("piggyback boosting") transconductance of the CG LNA by implementing a current-reuse method to reduce the power dissipation by sharing the bias current between the boosting and the UWB signal amplifying stages[10]. An enhanced π match input network is used to achieve wideband input impedance matching as well as high and flat gain [11].

A 1-to-6 on-chip transformer acts as a low noise amplifier with zero power dissipation and high linearity while providing ESD protection and differential outputs [12]. Low power input matching has achieved by implementing an active shunt feedback architecture while the current of the feedback stage is also reused by the input transistor to improve the current efficiency of the LNA. A forward body biasing method is utilized to tune the feedback coefficient [13]. Low noise figure and wideband matching in the subthreshold region has attained by using a gate inductor aided impedance matching and a current-reuse feed forward noise cancellation technique, respectively [14]. An inductor between the gate of the cascode transistor and the power supply combined with a digitally programmable capacitor between the gate and the drain of the cascode transistor facilitate to improve the Third-order Intermodulation Intercept Point (IIP3) of a subthreshold LNA [15].

II. Common Source Cascode LNA:

N_1 acts like an amplification transistor in Cascode LNA with LC load shown in Fig 1. N_2 acts like Cascode transistor. Cascoding increases the output resistance of the circuit and hence the gain. Cascoding provides isolation between input and output. Thus N_1 and N_2 are the same types of amplifiers; therefore the given cascode amplifier can be named as Telescope

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IMPLEMENTATION OF PAPR REDUCTION SCHEMES BY USING DCT AND SLM TECHNIQUES

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ABSTRACT

One of main disadvantage of Orthogonal frequency division multiplexing (OFDM) is high peak-to-average power ratio (PAPR). In this paper, two effective PAPR reduction schemes are proposed. These techniques combine the DCT and SLM techniques. The scheme 1 is composed of the DCT followed by the SLM technique, and the DCT is used followed by conventional SLM in proposed scheme 2. Simulation results show that the proposed schemes can obtain significant PAPR reduction performance with that of ordinary SLM techniques.

KEYWORDS: *SLM, DCT Transform, PAPR, OFDM*

1. INTRODUCTION

Wireless communication is among technology's biggest contributions to mankind. Wireless communication involves the transmission of information over a distance without help of wires, cables or any other forms of electrical conductors. The transmitted distance can be anywhere between a few meters (for example, a television's remote control) and thousands of kilometers (for example, radio communication). Some of the devices used for wireless communication are cordless telephones, mobiles, GPS units, wireless computer parts, and satellite television.

Advantages:

Wireless communication has the following advantages:

- Communication has enhanced to convey the information quickly to the consumers.
- Working professionals can work and access Internet anywhere and anytime without carrying cables or wires wherever they go. This also helps to complete the work anywhere on time and improves the productivity.
- Doctors, workers and other professionals working in remote areas can be in touch with medical centers through wireless communication.

Disadvantages

The growth of wireless network has enabled us to use personal devices anywhere and anytime. This has helped mankind to improve in every field of life but this has led many threats as well

Wireless Medical Technologies

New wireless technologies, such as mobile body area networks (MBAN), have the capability to monitor blood pressure, heart rate, oxygen level and body temperature. The MBAN works by sending low powered wireless signals to receivers that feed into nursing stations or monitoring sites. This technology helps with the intentional and unintentional risk of infection or disconnection that arise from wired connections.

2. ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING (OFDM)

Orthogonal Frequency Division Multiplexing (OFDM) is a Multi-Carrier Modulation technique in

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DWT Based Biomedical Image Compression

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Abstract: **Image compression technique is one of the application of image processing which resolves the problem of storage and transmission bandwidth. Image compression may be lossy or lossless and is dependent on the selected technique. In the proposed methodology we have considered biomedical images of dicom image format and applied discrete wavelet transform for different dataset samples of different modalities. We have considered Daubechies, Biorthogonal and Symlet families for analysis. Objective parameters considered for quantitative analysis are compression ratio (CR), peak signal to noise ratio (PSNR) and mean square error(MSE). Reverse biorthogonal filter of order 5.5 of biorthogonal family gives best results with high PSNR, low MSE and good CR. Dicom files we have considered are of different sizes and had achieved the CR of maximum 20. For our work we considered a sample set of 15 images of each modality (i.e., MRI, CT, X-RAY).**

Keywords: **DWT, Dicom, Daubechies, Reverse biorthogonal, Symlet, CR, PSNR, MSE.**

1. Introduction

Wide advancements in digital technology has accelerated the development of image processing software and need for better compression algorithms. Image compression is the vital research area and the use of any compression algorithm depends on representation of the transformed image and its usefulness for certain application though

higher compression ratios are obtained. When a series of images or an image of huge data is to be transmitted, it requires processing. Image contains large data hidden in its picture elements called pixels which are highly correlated. The wavelet theory has been used widely with better features and thus use of wavelet based image compression is primary objective of this paper.

A. Image compression

Image compression is helpful for deep analysis of any image. It reduces the storage space and transmission bandwidth which is necessary for many image processing applications. Image compression is a technique where size of the image is reduced in order to facilitate more images fit into a memory space or a single disk. There are mainly two categories of image compression and their major objective is to reconstruct original image without loss of numerical values:

- Lossless compression
- Lossy compression

Lossless compression: In lossless type of compression, image data not varies but only some redundant data is removed. The reconstructed image remains as the size of the original images even after compression. It is preferred in the certain areas where information should not be lost, for example medical imaging. These are expensive and hence are used in only required areas based on cost and their usage. Lossless compression algorithms include Run Length coding, Huffman coding, Arithmetic coding and Dictionary based coding.

Lossy compression: Compared to lossless compression in lossy methods the compression rates are high as the random noise is being removed through lossy techniques. The reconstructed may not the replica of original one and lossy compression techniques include transformation coding, Vector Quantization, Fractal coding, Block truncation coding and Sub-band coding.

B. Discrete Wavelet Transform

Wavelets are the waveforms effectively of short duration with average values of zero and have an irregular shape. A signal can be divided into many sub parts which are shifted and scaled versions of their mother wavelet. A wavelet transform can be used for this decomposition and we can remove some of the details represented by their coefficients. A very small wavelet is used to remove fine details and large wavelets remove coarse details. There are many types of wavelets and are categorised into four families:

- Haar wavelet transform
- Daubechies wavelet transform
- Symlet wavelet transform
- Biorthogonal wavelet transform

In the proposed methodology we have considered a group of filters from each family i.e., haar(db1), db2, db3, db4, db5, db5, db6, db7, db8, db9, db10, sym2, sym8, sym15, sym25, (reverse biorthogonal) rbio1.5, rbio2.6, rbio3.3 and rbio5.5.

2. Medical image compression

Medical imaging technology had made doctors look deep into the parts effectively without having deep cuts through the body. Patient's data have been stored for medical diagnosis and for future use in digital form with advancements in image

EXPLOSIVES DETECTION AND CONTROL USING EMBEDDED SYSTEMS

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ABSTRACT:

In modern times due to continuous evolving threats in our daily lives and changing social conditions we are under constant threat of terrorism and manmade accidents. Daily many of our soldiers risk their lives to keep us safe. Due to evolution electronics and advanced microcontrollers many cost effective systems have evolved which reduce life threat and are reliable. The traps are a new type of threat they are well hidden and cannot be caught simply by observing. Instead of relying on solely eyesight we can utilize advanced sensors and electronic devices to get better realization of the available dangers and obstacles. So we need to implement a system that detects and jams the devices based on their electronic configuration. These systems can further be used as explosive controller to make controlled detonations and further application in industrial zones.

Keywords: explosives ,Arduino,bot, detection, control.

I.INTRODUCTION:

The technical improvement together with the need for high performance robots created faster, more accurate and more intelligent robots using new robots control devices, new drives and advanced control algorithms. The presented robot control system can be used for different sophisticated robot applications. This bomb detecting robot is fully controlled by the Arduino. Most of the military organization now takes the help of robots to carry out many risky jobs that cannot be done by the soldier. These spy robots used in military are usually employed with the integrated system and sensors. The military robots also have different shapes according to the purposes of each robot. Thus the proposed system, an Intelligent wireless Robot saves human lives and reduces manual error. This is specially designed bomb detecting robot system to save human life and protect the country from enemies.

One of the most important things about these robots is that they have the capability to perform missions remotely in the field, without any actual danger to human lives. Using one chip that contains all the needed functions in place of a microprocessor and many peripheral chips has compact the size and the power conservation of control oriented applications. We are performing this task using an arduino microcontroller.

II.LITERATURE REVIEW:

We read about terrorism and all the other threats in news and people are hugely effected by this to save human lives we are risking a robot instead of a human to overcome these problems. For that reason we are using an embedded system to overcome these issues so this project is mainly dedicated to the field of security and military.

III.PROPOSED METHODOLOGY:

The proposed methodology is devised into mainly number of modules. Unmanned robot is attached to a Bluetooth sensor which is operated by an android device that sends the instructions through its attached Bluetooth via android application.The proposed methodology is explained below in the block diagram. The block diagram is a perfect control system executing the task of detection and control using various sensors and modules. The proposed methodology is to build a cost effective robot that can be maintained and reused in many applications based on the requirement.

ADAPTING TV REMOTE AS CORDLESS MOUSE FOR PC

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ABSTRACT:

A conventional PC/LAPTOP uses a mouse to operate and control all its applications. As a PC mouse is wired to the system, one has to sit near the PC to operate it. This becomes very tedious when the PC is used for presentation purposes. In this proposed system TV remote can be used as a cordless mouse, and the user need not operate the PC sitting near to it.It requires frontend application on your computer. This is an implementation of RC5 remote reception on an Arduino micro controller. The received code is decoded and processed as per instructions in the program. The cursor position is moved according to the keys pressed. The Arduino micro controller is used to control all system. An integrated Infrared Receiver is used to receive the infrared signal from the remote-control handset. The received infrared signal was decoded by using the program, which was written on the ROM of the microcontroller. The programs are flashed on the ROM area of the microcontroller. The details of the switch pressed were sent to the PC through its serial port. For every action corresponding to PC indicated with buzzer sound.This makes system very smart and simple.

Keywords: ***Arduino UNO, TSOP1738, TV Remote, PC***

I. INTRODUCTION

Consumer electronic devices and personal computers have become inevitable part of our life. Similarly, mobile devices and computers like cell phones and tablets are becoming more and more commonly used in our daily life. Controlling consumer electronic devices and computers remotely is an important aspect of the technology. The main objective of this project is to design an Arduino based system to control a computer with an IR remote. To achieve the task we have used a TV remote, an Arduino, an IR receiver. For interfacing the system with PC, we have selected USB interfacing. The circuit is simple and easy to understand. We have tried to make the project user friendly as much as we can. It is well suited in almost all PC with operating systems like windows vista, Microsoft windows XP, and windows 7. This article discusses a cordless mouse for the PC using TV remote.

The hardware and software requirement of this project mainly include Arduino, TV remote, IR sensor, resistors, LED, capacitors and languages: C++.In the evolution of computer user interfaces, the mouse and the keyboard have withstood challenges from other input devices such as joystick, light pen, track ball and many more devices. But still in most of the computer application. We are using mouse and keyboard as standard devices. This is not same for the people who with severe disabilities.

SMART HOME AUTOMATION SYSTEM WITH POWER MONITORING

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ABSTRACT:

This paper purposes the study of Internet of Things (IOT) based home automation system. Internet of things (IOT) based home automation system can be controlled over mobile devices. This system can perform varied functions to be performed at home. This allows accessibility over internet from any corner in the world. The main object of this project is to minimize the usage of electricity and reduce human efforts. The Home Automation system (HAS) incorporates various aspects of technologies such as wireless networking, communication over cloud. The data to be analyzed is stored onto the cloud. The user can access multiple appliances over the internet as per their convenience. This is a low-cost system. This system can control multiple devices. This system also helpful to monitor the usage of power in LCD display.

Keywords: ***Arduino UNO, NODE-MCU, LCD, Energy meter, Mobile***

I. INTRODUCTION:

The demand for automated systems has widely increased due to advancement of Automation Technology. The rapid increase in the number of users of internet has made Internet a part of life, and Internet of things (IOT) is the latest and emerging internet technology. Internet of things (IOT) is basically the interconnection via the internet of computing devices embedded in everyday objects, enabling them to send and receive data. It is a communication between multiple devices with no or less human intervention. Internet of things (IOT) can minimize human efforts. Internet of Things (IOT) analyzes the data retrieved from the sensors and performs appropriate activities thereby saving human time will continuously update the system information as well as the user. The home automation systems are gaining popularity day by day due to their ease of use and wide operations capabilities.

II. LITERATURE REVIEW:

Home automation plays a very important role in modern era because of its flexibility in using it at different places with high precision which will save money and time by decreasing human hard work. Prime focus of this technology is to control the household equipment's like light, fan, AC etc. This research paper has detailed information on Home Automation and using Arduino, GSM and how we can control home appliances using Android application.The main aim of the project is to develop a system that will provide remote control of home appliances. This paper is mainly concerned with the control of light or any other home appliances using internet. It is meant to save the electric power and human energy.

A low cost and user-friendly smart home system, which uses an Android application to communicate with the cloud and provides switching functionalities, is presented. The System eliminates the use of Personal Computer (PC) and other Computer Peripherals which leads to overall reduction in the cost of the system. Unlike the similar system which uses either of

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AN ARITIFICAL COMMUNICATION SYSTEM FOR DEAF AND DUMB PEOPLE

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Abstract

One of the important problems that our society faces is that people with disabilities are finding it hard to cope up with the fast growing technology. Generally deaf and dumb people use sign language for communication but they find difficulty in communicating with others who don't understand sign language. Sign language is an expressive and natural way for communication between normal and dumb people (information majorly conveyed through the hand gesture). Since most hearing people do not know how to "speak" the sign language and have no patience to learn, it is usually inconvenient for deaf and dumb people to communicate with them. Micro controller based speaking system for deaf and dumb is designed to give the signs, which are preloaded in the device. It is a micro controller based device, which gives the alert sounds just by pressing the control buttons, which are given some redefined messages like asking for water, washroom etc., here the person can just press the control button which indicates the sign of water (example) then the device sounds the same with some output volume. Micro controller is the heart of the device. It stores the data of the needs of the person. So that it can make use of the data stored whenever the person uses the device. This device helps the deaf and dumb people to announce their requirements. By this the person who is near can understand their need and help them. This saves the time to understand each other and ease in communication.

I. INTRODUCTION

Humans know each other by conveying their ideas, thoughts, and experiences to the people around them. There are numerous ways to achieve this and the best one among the rest is the gift of "Speech". Through speech everyone can very convincingly transfer their thoughts and understand each other. It will be injustice if we ignore those who are deprived of this invaluable gift; the deaf and dumb people. The only means of communication available to the deaf and dumb people is the use of "Sign Language". Using sign language they are limited to their own world. Deaf and dumb people are unable to save themselves from danger zone only because of they can't talk and hear. This limitation prevents them from interacting with the outer world to share their feelings, creative ideas and Potentials. Very few people who are not themselves deaf and dumb ever learn to Sign language. These limitation increases the isolation of deaf and dumb people from the common society. Technology is one way to remove this hindrance and benefit these people [1] [2].

Thus we are proposing a new technique called an artificial assistant for deaf and dumb people which will be very useful to them (deaf and dumb people) for conveying their views to others. Deaf and dumb people can use the buttons provided in the keypad, so that normal people will come to know the needs of the deaf and dumb people.

This artificial assistant will solve the problem of alerting the emergency services and care takers when the deaf and dumb people are in danger zone also they can save others who are in danger by pressing the emergency button only once. By using this system the care takers can monitor the deaf and dumb people through a web application or Google assistant. This application was developed by using IoT.

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VLSI Architecture of Reconfigurable hard decision Viterbi Decoder

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ABSTRACT:

In order to control errors in data transmission through a noisy channel Viterbi algorithm has served as a powerful tool meant for interpreting the conventional codes. It is centred on extreme possibility algorithm for interpreting the data? While coming to hardware implementation of Viterbi algorithm became crucial as it drain large amount of assets because of its complexity. This paper confers the implementation of an efficient VHDL execution of a Viterbi decoder by means of the concept of pipelining to diminish the critical path. There by improving the operating frequency of the design and improving the through put using Modalism and Xilinx ISE tools for simulation and synthesis of modules respectively.

KEYWORDS: Error correcting code, convolutional codes, Viterbi algorithm, convolutional codes.

I.INTRODUCTION

Viterbi Decoder (VD) mostly recommended aimed at fault detection and rectification in satellite, broad space communication which is identified and chosen as a competent technique used for the realisation of utmost likely hood interpreting the convolutional codes. It is known to be some of the competent techniques for interpreting convolutional codes. In order to convey message through piercing conduit convolutional code proposes far improved outcomes now compare to block codes .Specific spare bit included on or after encoder sideways aimed at decreasing the chance of mistakes in the gesture to find survivor route which is accumulate in Survivor Path Metric Unit. .Continuous stream of bits are encoded by the convolutional coding technique which is also an efficient method for solid conclusions. Viterbi decoder (VD) primarily includes 4 elementary building blocks: Branch Metric Unit (BMU), Add Compare Select Unit (ACSU), Survivor Path Memory (SPMU) and Trace Back Unit (TBU), purpose of BMU be there to define the branch metric, branch metric is the hamming distance among whole obtained also predictable signals .ACS Unit computes the selection of the bit which is

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Dual band transceiver of 1x2 grid patter printed on fabric woven and cancer dete by composites

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Wearable transceiver with composite test-beds for breast cancer diagnosis

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ABSTRACT

The dual-band wearable antennas are built with reinforced epoxy materials printed on textile fabrics for use in the diagnosis of breast tumors. Microwave Imaging Device has incorporated these recommended antennas. These slots were designed and tested by the (Agilent N99917A) Microwave Analyzer for the wearable cotton and polyester materials. The dual resonant frequencies 4.85 GHz and 3.21 GHz were offered. Thus these wearable antennas did not result in a lack of reflection on the tissue. Therefore these antennas deliver a low profile, broadband structure and also the large coverage area. Consequently, its measurement analysis was approved for these proposed prototypes.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Research – 2019.

1. Introduction

New technology, portable radio frequency circuits, rapidly develop and apply innovative concepts for medical diagnostics. The proposed modules are combined with wearable fabric materials. These modules are wearable. Are used for the diagnosis, navigation, monitoring, radar technology, mobile computing, UWB and public security defense of the Textile Microstrip Patch Antenna (MPAs). These modules can work either within a licensed or unlicensed frequency range of the Industry Science and Medicine (ISM) band. There are no wearable capabilities in the current clinical application for breast cancer. These proposed modules wearable are passive components used in Microwave Imaging (MI) systems, which have been integrated in the clinical trials with wearable features. The following appreciate the diagnostics module's benefits: I a pleasant design; (ii) cost efficient module diagnostics; (iii) the prospect of using multiple diagnostics modules when failures have occurred in clinical studies and (ii) comfortable patent diagnostics modules when guilty feelings are not dealt with in the clinical trials. These wearable diagnostic modules develop wireless, UWB-band frequencies, body-centric communication which is particularly needed for MI systems. Therefore, on textile materials like tissue cotton and polyester these microstrip slots have impressed. In the literature on these wearable modules [1] some reports indicated identification of breast cancer in conjunction with a clinical test. The clinical study analyzed the propagation of the microwave signal through substance of absorption. Soon-IK et al. [2] examined a cancerous image re-enacting by matric calculation (Sinc-Gauss shaped basic function, Jacobian). They also examined breast-phantom model and distinguished cancerous and healthy tissues. The MPT's models for the reconstruction of the breast imaging were investigated by Mohamand Mahfouz et al. [3]; and by Jorg Ulrich Fontius et al. [4] for calculating body temperature, the MPTs were used. Colin Gilmore & Joe Lovetri et al. [6] showed the breast phantom surroundings model. Lihong Wang et al. [5] inverted the multi-dimension cancerous fabric picture of the thermoelastic expansion theory that produced a pattern of acoustic wavy transmission. This invention has enhanced the distorted breast image. The non-invasive screen was invented by Kevin Morton et al. [7]. The cytological abnormal

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2214-7853/
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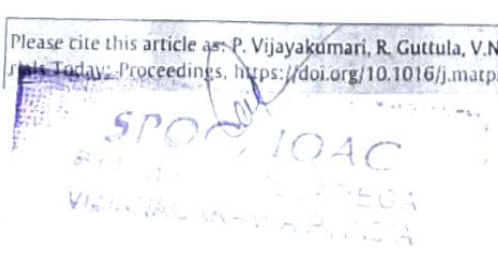

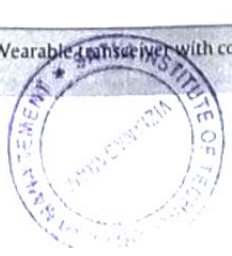

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AN INNOVATIVE AND EFFICIENT DEEP LEARNING ALGORITHM FOR COPY MOVE FORGERY DETECTION IN DIGITAL IMAGES

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Abstract

Digital images have become more easier to tamper with the rapid advancement in image processing tools and software. Digital image manipulation takes part to deform the content of a picture in order to accomplish some deceit purposes. Such deceits are acknowledged as forgeries. The forensic people need an effective means of observing such maliciously tampered data. Some important and effu ient forgeries are: image retouchingand,splicing and Copy-move forgery(CMF). Copy-move forgery is the most significant type of image forgery due to its effective nes and simplicity. CMF is nothing but the image copying from one location and pasting it in another location. In this process, we conceal the existing data in the picture or to generate a simulated image. This region duplication process modifies the meaning of the picture totally. The precise forgery detection plays a key role in digital images. Image forgery detection approaches may be active or passive. Copy-move forgery detection (CMFD) is a passive-Blind image forgery detection method. CMFD mainly impresses on the speed and rigorous of the detection method. The proposed CMFD method presents a new approach to solve the issues in existing methods that the tampered area is resized or rotated after attachment. The proposed method is an innovative and efficient algorithm called Generalized Approximate Reasoning-Based Intelligence Control (GARIC) algorithm. Hence, GARIC deep learning approach is used to detect the presence of falcification in images.

Keywords: *Digital image authentication, passive approach, copy-move forgery detection.*

1. Introduction

Nowadays, in this digital world, the digital images are playing vital role in many fields and industries. These digital images are affected by various kinds of attacks and other malicious activities. Image forgery is a sensitive issue and we have to take utmost care. With the swift reclamation of digital image processing scheme and the emerging growth of digital camera,software and forgery tools, tampering an image becomes much easier and increasesgradually. Resampling, splicing, object removel and copy-move forgery are the main methods to cause manipulations in images. Hence we need an efficient, accurate and roboust tampering detection methods to detect digital images.

Digital image forgery detection approaches [1] are split in to active authentication and passive authentication. Active authentication depends on the digital signature and need an original input image. It works on pre-embedded information or pre-registration. Active authentication is held during image formation and is mainly based on watermarking [2]. Passive authecation is blind and do not require pre-embedded information about input image. It can also create pre-existing images. Passive authentication finds the genuineness of images from an unknown and uncorrelated image.

The purpose of CMF is to alter the original image or to provide fake information. However it is difficult to identify the copy-moved image because of the copy paste image is same as whole image. More feature extraction machine learning algorithms are accomplished to solve this problem but in some case they reached the difficulties. so in our research we proposed the new deep learning algorithm scheme to address this issues.

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BLIND PEOPLE ASSISTANCE SYSTEM IN HOME USING RASPBERRY PI

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ABSTRACT

Visually impaired people are the people who can't identify smallest detail with healthy eyes. Those who have the visual acuity of 6/60 or the horizontal extent of the visual field with both eyes open less than or equal to 20 degrees these people are considered to be blind. Such people are in need of aiding devices for blindness related disabilities. As described in 10% of blind no usual eye sight at all, to help them move around independently and safely. The electronic aiding devices are designed to solve this issue.

Visually impaired people find difficulties detecting obstacles in front of them, during walking in street which makes it dangerous. The smart stick comes as a proposed solution to enable them to identify the world around them. In this paper we proposed solution by represented in smart system with infrared sensor to detect stair cases and a pair of ultrasonic sensors to detect any obstacles in front of the user, within a range of 4meters. Moreover, another sensor is placed at another side of the system for sack of avoiding hurdles. Speech warning messages and the vibration motor are activated when any obstacle is detected.

This system proposes conglomeration of technologies like image processing, speech processing...Etc... so the problems faced by blind people can be reduced to certain extent. Object recognition method in computer vision, image processing, text-to-speech conversion can be embedded in single object.

1. INTRODUCTION

Many millions of people all over world facing of issue like blindness due to many reasons at different ages. Some problems have been rectified by medication or surgery. But all the issues can't be resolved all the time. Some are facing age issues; by birth some people are blind, and many more. Of the 36 million people around the world who are visually impaired, from that about 15.0 million are found in India. India is now the world's largest number of blind visually impaired. India requires 2-2.5 lakh eyes every year, it has 109 eye banks manage to collect around of just 25,000 eyes, 30% of which can't be utilized. Many of the people cannot afford such eyes treatments.To be categorized as blind, there is a complete loss of vision. Blindness cannot be improved by simple visual aids such as glasses. For the indigents blindness is a drawback.

So this paper present a system to aid blind people by assisting a smart device to support them in all the places to sustain as usual like a normal people. To automate their home appliances by using voice module technology, recognition of obstacles by using wireless camera and transfers the information through voice speech. Obstacle detection using ultrasonic sensor. RF technology is used to transfer wireless information.

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LabVIEW Based Flood Monitoring System

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Abstract: In developing countries, heavy floods due to natural disasters such as hurricanes and earthquakes results in massive loss of life and property. Warning communities of the incoming flood provides an effective solution to this by giving people sufficient time to evacuate and protect their property. However, the range of early warning system solutions introduces a tangle of conflicting requirements including cost and reliability, and creates several interesting problems from factors as diverse as technological, social, and political. The complexity of these systems and need for autonomy within the context of a developing country while remaining maintainable and accessible by non-technical personnel provides a challenge not often solved within developed countries, much less the developing. After describing this problem, the proposed methodology gives a solution for the problem, initial experiments in implementing the solution, and lessons learned through that work. From this perspective, the Warning communities of the incoming flood, however, is an expensive proposal given the limited resources of the countries.

Keywords: Labview, Embedded Systems, Flood Monitoring System.

I. INTRODUCTION

A water level indicator may be defined as a system by which we can get the information of water level within the reservoir. Each and every time it might not be possible for the operator to keep an eye on the water filling process in the reservoir and immediately switch the dam gate manually once the reservoir is completely filled.

Keeping this in mind we have designed a system which can avoid these issues by completing the task automatic dam water level indication and alerting system. The automatic water level indicator and controller systems are quite useful to give the alert and indicate the water level of the reservoir.

The sample atomizer input water of the reservoir came from the input channel and output water of the reservoir from gates. When the turn ON input water with certain flow between 0 to 4. The water level of the dam should automatically fill with the water.

2. LITERATURE SURVEY

In IJEAT 2019, S Vara Kumari et al [1] proposed Early Flood Monitoring Systems Using IoT Applications. It represents the development of a flood monitoring system using the platform of Thingspeak application for storing and retrieving data from the systems using the HTTP protocol over Local Area Network. This system is based on one NodeMCU board integrated with the Thingspeak application. Firstly, a NodeMCU is placed in the flood prone areas where the NodeMCU acts as the transmitting unit which consists of an ultrasonic sensor that is used for the detection of the water level at the time of floods and then the data is displayed through the LCD. Now the data collected by the ultrasonic sensors will be passed to Thingspeak web application. In order to find the rate of flow a water flow meter is used which writes the flow rate to the Thingspeak application.

3. PROPOSED METHOD

The proposed method involves completely based on the Labview Software requirement. This software requirement consists of both front-end panel and back-end panel.Front end can maintain a tank, for dam and pipes knobs and warning indicator for dam level. Back end can maintain the circuitry; the circuit consists of Virtual Instruments. According to these Virtual Instruments the front end works. The water level can show in graph.

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At-Home Medical Equipment for the Physically Impaired using ZigBee and GPS Conrole

Anni Priyanka, Allu Venkateswara Rao, Dharma Raj Cheruku

Abstract: *In the absence of anyone, old people and people who depend on others may fall down accidentally due to lack of strength. Durable Medical Equipment (DME) is medical equipment installed at home. The proposed system helps in activating and sending the DME to the nearby hospital which can save a patient's life. This system has two sections. One is the multiple Zigbee transmitting section installed at home which includes the DME and sensors and the other section is the Zigbee receiver present at the hospitals. Also, this system is independent of current-infrastructure such as cell-towers, internet etc. In case of any power outage for many days during any natural disaster, the patient status is sent through Zigbee protocol. The proposed system is designed by using ARM 32-bit microcontroller. This system includes GPS, ZIGBEE, temperature sensor and heart beat sensor modules. All these modules are attached to the target patient at home. The GPS finds out the location of the patient. The heart beat sensor gives the output in digital form when we kept the finger on the sensor. The room temperature was sensed by the temperature sensor. Once the controller gets the information from these devices, the information is sent over the Zigbee protocol to the Zigbee receiver section and allows the nearby hospital staff know about the condition and location of patient.*

Keywords **: GPS, DME, ZigBee, LM35 sensor, Heartbeat Sensor, LCD.**

I. INTRODUCTION

For living in better way we use DME at home. Keeping this equipment in home also helps in completing daily activities. Some of the equipment includes walkers, oxygen tanks, nebulizers, CPCP, hospital beds and wheel chair etc. Medical devices can be active or static. Static devices are simple having few or no moving parts. While the active devices are bit complex. They require artificial power source such as a batter or electrical supply. These appliances perform more complex functions than static devices.

But, in case of power outage for many days during any natural disaster, the patient may face a life-threatening situation as they run on power. Though the DME devices are set-up with integrated batteries, they can with stand for more than one hour with lead batteries and with lithium batteries they can with stand up to more than three hours.. Also, the system should not rely on the electricity infrastructure such as cell towers. Reporting here is a DME tracking system the Zigbee protocol for the transmission of the data from the DME machines to the hospital zone.

II. RELATED WORK

There are many health monitoring systems being implemented for ICU patients. These systems are wired everywhere. Regular monitoring cannot be done to those patients when they are discharged. Also, there are some systems implemented wirelessly but the continuous monitoring of patient is not done. Those system monitors periodically.

Some health monitoring systems used the Mobile phone network and developed apps on it for convenient use. But, during the natural disasters, there may be power off. And the mobile signals may also be unavailable because of tower destruction or any other issues for many days. At that point of time, those systems cannot be useful as they depend on the network in that area resulting in failing to update patient data to the hospitals.

So, the requirement for continuously monitoring the patient data and also sending the collected data from the controller to the nearby hospital during power outage on a ZigBee network which does not require any infrastructure like cell tower, power etc is done by using an ARM processor.

III. PROPOSED SYSTEM FOR IMPLIMENTATION

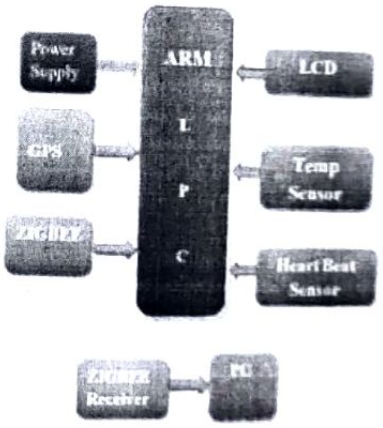

Fig1: Diagram for implementing the proposed system

In the proposed system, the microcontroller used is ARM7 LPC 2148. The different units used are Power supply unit, GPS, ZigBee, LCD, Sensors for Heartbeat temperature. The GPS and Zigbee units are connected to the microcontroller through serial communication and the sensors that is heart beat and temperature are connected to the microcontroller.

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A STUDY ON EFFECT OF LIME AND CEMENT ON ENGINEERING PROPERTIES OF EXPANSIVE SOIL

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Abstract: *Industrialization makes the necessity of construction which is imperative in everywhere. For any structure, foundation soil is very important and it has to be strong to support the entire structure. There is poor ground which causes compression in the form of differential settlements when structure are located or constructed with these soils. To avoid the differential movement in the zone of moisture migration stabilization of these soils with lime and cement could be effective measure. To arrest the problems encountered in Expansive soil, laboratory experimental analysis is modeled to study the individual and admixed effects of Lime and Cement on the geotechnical characteristics of Expansive soil. In this various percentages of cement with lime are added to expansive soil and tests like plasticity characteristics, compaction and UCS tests are performed and these mixes are subjected for curing to know the improvement in their stress. Addition of 10% of cement exhibited UCS values in the range of 0.180 MPa to 3.215MPa. Addition of 10% of lime exhibited UCS values in the range of 0.180 MPa to 2.950MPa. The influence of Lime and Cement addition on the swelling potential of Expansive soil is presented. Addition of 6% of Lime and 10% of Cement exhibited high UCS values in the range of 0.953 MPa to 7.832MPa*

Keywords: **Expansive Soil;UCS;Swelling Potential;**

1. INTRODUCTION

Expansive soils cover about 20% of total area in India. They found in the states of Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Tamil Nadu. These soils subjected to lot of swelling and shrinkage characteristics. High temperature and improper drainage conditions are usually key factors for the formation of these soils. These soils also called as Black cotton soils. The construction on these soils have been facing differential settlements resulting severe damages occurs in retaining structures and roads. Some of them are cracks in buildings and causes heaving of canals. The different tasks have been taken place due to properties of expansive soil of those areas; by replacing a fully or partly these expansive soils with essential soil

Expansive soils are highly problematic because of their alternative swelling and shrinkage. The problem of expansive soils is causing failures in the structures like buildings, bridges, and railway and highway embankments. Highways laid over these expansive soils as sub grades causes huge loss of economy due to their extensive damage. To understand severity and the characteristics of these soils are tested for Atterberg's limits, consistency indices and swell characteristics. To arrest these failures in expansive soils, stabilization is one of the popular methods. Addition of lime and cement to expansive soil (CH) is one such attempt to understand the possible mechanism governing the behavior of expansive soil-cement and lime mixes. Both of these materials are geotechnical characterized and compared by evaluation of their appropriate results. Their efficiency in reducing plasticity, swelling and improvement of strength characteristics of expansive soil (CH) are studied in compatibility with usage.

Table 1. Chemical composition of Black cotton soil

Description	Chemical Formulae	Range(%)
Silica	SiO_2	45-58
Alumina	Al_2O_3	13-18
Ferric Oxide	Fe_2O_3	7-15
Lime	CaO	1-8
Magnesium Oxide	MgO	2-5
Titanium Oxide	TiO_2	0.5-2
Carbonate	CO_3	0.5-5

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Characteristics of M30 Grade Concrete using Copper Slag as Partial Replacement for River Sand as Fine Aggregate

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ABSTRACT

Concrete is the preferred construction material for a wide range of buildings, bridges and any other civil engineering structures. It is the second most widely consumed substance on earth after water. Aggregates are considered as one of the main constituents of concrete since they occupy 70-80% of the volume of concrete. In many countries, there is a scarcity of natural aggregates. To reduce dependence on natural aggregates as the main source of aggregate in concrete, artificially manufactured aggregates generated from industrial wastes provide an alternative for the construction industry. Copper slag is one such industrial waste that can be implemented as an alternative for natural aggregate. Copper slag is an excellent by-product or waste material that retains its original properties. Due to its chemical composition which includes high iron, silica and aluminum oxide content, it can be used as a partial replacement for sand in concrete mixes. This paper emphasizes on COPPER SLAG CONCRETE which is a new evolution in the field of concrete design. Copper slag upon using as a partial replacement for river sand as fine aggregate can avoid the voids in the concrete and may increase the durability and strength of structure. In this study M30 grade concrete mixes of 30%, 40% and 50% replacement of river sand with copper slag are tested for compressive, split tensile and flexural strengths for the ages of 1, 3, 7, 28, 56 and 91 days of curing.

Key Words: *Copper slag, Copper slag concrete, Fine Aggregate, M30 Grade Concrete.*

1. INTRODUCTION

Concrete is the man made material widely used for construction purposes. It is a popular building material in the world for past 170 years and more. The usual ingredients in concrete are cement, fine aggregate, coarse aggregate, and water. Although worldwide used concrete has disadvantages such as scarcity in availability of natural aggregates like river sand which is used as fine aggregate in concrete, consumption of aggregates in construction industry globally are still projected at an increase of more than 51 billion metric tons by 2021. Such large consumption of natural aggregates will cause destruction to the environment. To overcome this issue, industrial wastes should be used as an alternative to naturally available aggregates. The beneficial use of industrial by-products in concrete is well known for many years with regard to the use of materials such as coal ash, fly ash, pulverized fuel ash, bottom ash, blast furnace slag and silica fume as partial replacement for Portland cement or as fine aggregate.

Natural resources are depleting worldwide while at the same time the generated wastes from the industry are increasing substantially. The sustainable development for construction involves the use of non-conventional and innovative materials. This can be achieved by recycling of waste materials in order to compensate the lack of natural resources and to find alternative ways for conserving the environment.

1.1 Copper Slag

Copper slag is produced as a by-product of metallurgical operations in reverberator furnaces. For every ton of copper production, about 2.2 tons of copper slag is generated. Earlier copper slag was used as an abrasive material for removing rust and marine deposits from ships through sand blasting. After repetitive recycling and reuse, the copper slag lost its original abrasive property and with no good use thereafter, it was disposed in landfills. Industries found a novel way of encapsulating this waste into concrete, thereby not only removing the environmental concern but also finding a value-added and meaningful substitute for natural sand.

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Study on Percentage Replacement of Bitumen with Molasses in Stone Matrix Asphalt

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Abstract - *Bitumen the residue left over from petroleum distillation is the most significant bonding agent used for road way construction. Increasing energy costs and the demand for petroleum has encouraged the development of alternative binders to modify or replace asphalt binders. such sustainable and environmental friendly materials like sugar cane waste molasses are used. There are three major types of asphalt surfacing characterized by a mixture of bitumen and stone aggregate. They are Dense Graded asphalt (DGA), Stone Mastic Asphalt (SMA), and Open Graded Asphalt (OGA). For this investigation SMA has selected. In the present study, an attempt has been made to evaluate the basic properties of Bitumen and coarse aggregate. SMA samples were prepared using Marshall compaction pedestal by varying the binder content as 5.5, 6.0, 6.5 and 7.0 per cent by weight of aggregates and to find the optimum percentage of molasses content by replacing 5 to 15 % with 1 % increment by weight of OBC (from Marshall stability test results). Volumetric Properties are improved for Molasses modified SMA mix* but drain down increases.

***Key Words*: Bitumen, Aggregate, Stone Mastic Asphalt, molasses,Marshal stability test**

1. INTRODUCTION

Majority of the roads all over the world are made up of flexible pavements. Flexible pavements consist of a bituminous layer on the surface course and sometimes in base course followed by granular layers in base and sub base courses over the subgrade. The bituminous pavements play a vital role in Indian pavements at present. Bituminous pavement allows stage construction and may use a wide range of construction materials, often leading to substantial savings through the use of locally available materials.

1.1 Stone Matrix Asphalt

Stone Matrix Asphalt is a gap graded, dense, hot mixture Asphalt containing 70-80% coarse aggregate, 6-7% of binder, 8-12% of filler and 0.3-0.5% of fiber or Modifier. The SMA mixtures is different from other mixtures because of its skeleton type structure providing better stone-to-stone contact between the coarse aggregates which provides good internal friction and high resistance to rutting. Mineral filler plays an important role in the properties of SMA mixture in terms of air voids, voids in mineral aggregate and optimum binder content in the mix. The durability of SMA mixtures improved by slow rate of deterioration obtained due to low permeability of binder mastic content and aggregates. The high binder content increases the fatigue resistance, provides flexibility to the pavement and lowers the air voids content.

1.2 Molasses

A by-product of sugar factories in countries growing sugar cane and/or sugar refineries processing raw sugar cane. A dark brown syrupy liquid with earthly caramel-like, non-pungent smell. Molasses is the dark, sweet, syrupy byproduct made during the extraction of sugars from sugarcane and sugar beets. Molasses can vary in color, sweetness, and nutritional content depending on the variety or how much sugar has been extracted. By spraying this molasses over the aggregates increases binding characteristics. The molasses modified bituminous mix reduces the void present in the mix and this prevents the moisture absorption and oxidation of bitumen entrapped air.

2. Results and Discussions

2.1 Results for Aggregate

Aggregate tests such as Specific Gravity Test, Aggregate Impact Value test, Los Angeles Abrasion Value Test, Aggregate Crushing Value tests, Water absorption test were conducted according to IS Standards. Results are shown in following table.

Table -1: Aggregate test results

Test	Test method	Results(%)
Aggregate Impact Value	IS:2386 (IV)	22.59
Los Angeles Abrasion Value	IS:2386 (IV)	19.10
Crushing Value	IS-2386 (IV)	23.47
Water Absorption	IS:2386 (III)	0.54

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FIXED POINTS OF ALMOST GENERALIZED $\mathscr{Z}_s$-CONTRACTIONS WITH RATIONAL EXPRESSIONS IN S-METRIC SPACES

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Abstract. In this paper, we introduce the notion of almost generalized $\mathscr{Z}_s$-contraction with rational expressions and α-admissible almost generalized $\mathscr{Z}_s$-contraction with rational expressions using simulation functions in S-metric spaces. We prove the existence of fixed points of such mappings in complete S-metric spaces. We give examples in support of our results.

Keywords: S-metric space; $\mathscr{Z}$-contraction; simulation function; $\mathscr{Z}_s$-contraction; almost generalized $\mathscr{Z}_s$-contraction with rational expressions; α-admissible almost generalized $\mathscr{Z}_s$-contraction with rational expressions.

2010 AMS Subject Classification: 47H10, 54H25.

1. INTRODUCTION

In 1975, Dass and Gupta [14] introduced a contraction condition involving rational expressions and established the existence of fixed points in complete metric spaces. Later, in 1977,

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FIXED POINTS OF (ψ, φ)-WEAKLY CYCLIC COUPLED CONTRACTIONS IN S-METRIC SPACES

Venkata Ravindranadh Babu Gutti, Durga Sailaja Pericherla, and Srichandana Gadhavajjala

ABSTRACT. Let X be an S-metric space and $F : X \times X \to X$ be a mapping. We introduce (ψ, φ)-weakly cyclic coupled contraction mapping and Kannan type (ψ, φ)-weakly cyclic coupled contraction mapping in S-metric spaces. If $F : X \times X \to X$ then we prove the existence and uniqueness of strong coupled fixed point of F in complete S-metric spaces where F is of (ψ, φ)-weakly cyclic coupled contraction mapping and Kannan type (ψ, φ)-weakly cyclic coupled contraction mapping. Examples are provided to support our results.

1. Introduction and Preliminaries

Generalization of contraction conditions in proving the existence and uniqueness of fixed points play an important role in nonlinear analysis. In 1969, Kannan [**20**] proved the existence of fixed points of certain type of contraction mappings which are not continuous and different from contraction mappings. Later Kannan type mappings in various spaces have been considered in large number of works, some of which are in [**4**], [**7**], [**9**], [**10**], [**11**]. In 1997, Alber and Guerre-Delabriere [**2**] introduced the concept of weakly contractive mapping as a generalization of contractive mapping and proved the existence of fixed points for such mappings in Hilbert spaces. Rhoades [**30**] extended this study to metric space setting. On the other hand, in 2003, Kirk, Srinivasan and Veeramani [**22**] introduced cyclic contractions in metric spaces and proved the existence and uniqueness of cyclic

2010 *Mathematics Subject Classification.* 47H10; 54H25.
Key words and phrases. S-metric space, Cyclic mapping, Coupled fixed point, Strong coupled fixed point, (ψ, φ)-weakly cyclic coupled contraction mapping and Kannan type (ψ, φ)-weakly cyclic coupled contraction mapping.
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Fixed points of almost generalized weakly contractive maps with rational expressions in S-metric spaces

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Abstract

In this paper, we prove the existence and uniqueness of fixed points of (φ,ψ)-almost generalized weakly contractive maps with rational expressions in S-metric spaces. Also, we prove the existence and uniqueness of fixed points of α-admissible almost weak ψ-contraction maps with rational expressions in S-metric spaces. Our results extend the results of Jaggi [16] , Dass and Gupta [10] to S-metric spaces. Also our results extend and generalize the results of Sedghi, Shobe and Aliouche [21]. Supporting examples are provided to our results.

Keywords

S-metric space, fixed point, almost generalized weakly contractive maps, α-admissible maps.

AMS Subject Classification

47H10, 54H25.

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1. Introduction and Preliminaries

The study of fixed point theory in metric spaces is very interesting area in Analysis. Several generalizations of metric spaces have been obtained by many authors who established the existence of fixed points and common fixed points of various contractive and contraction maps. For more works on this literature, we refer [2], [7], [8], [11], [14].

In 1975, Dass and Gupta [10] extended the Banach contraction principle using rational expressions as follows.

Theorem 1.1. [10] *Let (X,d) be a complete metric space and $T: X \to X$ be a self map. If there exists $\alpha,\beta \geq 0$ with $\alpha+\beta < 1$ satisfying*

$$d(Tx,Ty) \leq \alpha \frac{d(x,Ty)[1+d(x,Tx)]}{1+d(x,y)} + \beta d(x,y)$$

for all $x,y \in X$, then T has a unique fixed point in X.

In 1977, Jaggi [16] introduced rational type contraction mappings and proved the existence of fixed points of such mappings.

Theorem 1.2. [16] *Let T be a continuous self map defined on a complete metric space (X,d). Suppose that T satisfies the following condition: there exist $\alpha,\beta \in [0,1)$ with $\alpha+\beta<1$ such that*

$$d(Tx,Ty) \leq \alpha \frac{d(x,Tx)d(y,Ty)}{d(x,y)} + \beta d(x,y) \qquad (1.1)$$

for all $x,y \in X$ with $x \neq y$. Then T has a fixed point in X. The map T which satisfies (1.1) is called as 'Jaggi contraction map' on X.

Later, many authors worked in this direction to establish fixed points and common fixed points of mappings involving rational expressions. These are some of the references in this direction [1], [3], [4], [9], [15].

In 2012 Samet, Vetro and Vetro [20] introduced α-admissible maps on metric spaces as follows.

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Authenticaion by Encrypted Negative Password Using Advanced Encryption Standard

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ABSTRACT

Most of the authentication systems are password based, so storing the password is one of the importantfeature for any authentication system. Though various types of authentication systems have emerged over the world, still passwordbased systems are used widely, in spite of its security flaws. Storing those passwords securely is an important characteristic for those type of password authentication systems. In this paper, we propose a password authentication framework which is used for storing the password more securely when compared to general password storing systems. In this framework, we use various techniques to improve the security for passwords, we use cryptographic hash technique, negative password technique and a symmetric key encryption algorithm. In our framework, initially, a plain password is received from the client and it is hashed through a cryptographic hash function (e.g., SHA-256). Then, the hashed password is changed into a negative password. Finally, that negative password is encrypted into an Encrypted Negative Password (abbreviated as ENP) using a symmetric-key algorithm (e.g., Advanced Encryption Standard), and multi-iteration encryption could be implemented to further improve security. The cryptographic hash function and symmetric encryption make it difficult to crack passwords from ENPs. Additionally, there exists a lot of corresponding ENP's for a given plain password, which makes precomputation attacks (e.g., lookup table attack and rainbow table attack) unworkable. The algorithm complexity analyses and comparisons show that the ENP could resist lookup table attack and provide efficient password protection under dictionary attack. It is important to mention that the ENP does not introduce extra elements (e.g., salt) besides this, the ENP could still resist precomputation attacks. It does not need any other elements other than the plain password.

Keywords: Password Security, Encryption, Hashing, Negative Database, Advanced Encryption Standard, Secure Hash Algorithm.

INTRODUCTION

Due to the advancement of the Internet, an enormous number of online services have appeared, in which password authentication is the most extensively used authentication technique, for it is available at a low cost and easy to install. Hence, password security constantly attracts great attention from academia and industry. In spite of great research achievements on password security, passwords are still cracked because of the user's careless activities. For example, many users often select weak passwords; they have a tendency to reuse same passwords in various systems, they generally set their passwords using familiar terminology for their suitability to remember. In addition, system glitches may cause password negotiations. It is very tough to get passwords from high security systems. On one side, stealing authentication data tables (containing usernames and passwords) in high security systems is tough. On the other side, when doing out an online guessing attack, usually there will be a limit to the number of attempts to login. Though, passwords may be leaked from weak systems. Vulnerabilities are regularly being identified, and not all systems could be patched to resist attacks, which gives opponents an opportunity to illegally access weak systems. In fact, some old systems are more exposed due to their lack of maintenance. Lastly, since passwords are frequently reused, adversaries may log into high security systems through cracked passwords from systems of low security.

After obtaining authentication data tables from weak systems, intruders can carry out attacks. Passwords in the authentication data table are generally in the form of hashed passwords. As processor resources and storage resources are becoming more abundant, hashed passwords cannot resist precomputation attacks, such as rainbow table attack and lookup

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Designing And Development Of Sensor Network Surveying Issues Using Computational Intelligence

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ABSTRACT:WSNs have attached much attention in recent years. The potential application of WSNs is boundless. They are heterogeneous networks of distributed autonomous gadgets, which might monitor physical or sense or environmental condition cooperatively. They have been utilized for storing, sharing and collecting sensed data. It combines various technologies like microelectronic,computational, modern sense communication and distribution processing technology. The models of CI are effectively utilized in latest years to find numerous issues like energy aware routing, data aggregation and fusion, optimal development, security, task scheduling, and localization. We surveyWSNs, mobile ad hoc network, fixed sensor networks, & cellular network. It provides optimal solution of uncertainties by the applications of adaptive critic design in power system. The aim of this survey will to define the state of art in utilizing CI models for sensor network design to detect present survey issues & recommend probable future survey directions.

Keywords: Computational intelligence (CI), data aggregation, security, wireless sensor network (WSNs), radio frequency identification (RFID), sensor nodes (SNs)

1. INTRODUCTION

Now a day, sensor technology development grows rapidly with capability not only for sensing and signal acquisition but also for computing and communicating to other device[1,2]. This sensor technology is known as WSN. The WSNs are distributed in nature whereas SNs operate independently without any centralized authority. The WSNs in network sense external data from nearby environment process the sense data locally and then send the data to base station for further processing through wireless communication[3-7]. The WSN is the main important method in 21st century.Normally, SNs have been clustered in clusters and every cluster has a node, which performs as a cluster head. Everynode forwards this sensor data to cluster head that is turn routes it to particular node named sink node. Wireless sensor technology refers to RFID and WSNs based sensors.Due to increase interest in the field of wireless sensor network s many applications has led to expansion of novel extent of wireless sensor gadgets based on RFID[8]. The main difference between RFID and WSN is that, RFID don't have any cooperative capabilities but WSN authorized different networks

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A Novel Twdlnn And Mining Based Breast Cancer Prediction System in A Big Data Environment

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Abstract

Amongst women, Breast Cancer (BC) has turned out to be the main reason for mortality. Predicting the BC early can help in saving the women as of the severe stage of cancer. Though most existing research has been utilizing disparate algorithms for prediction, they still lack in some areas, like accurate prediction and the execution speed. Thus, to trounce such cons, this paper proposed a novel Target Weight based Deep Learning Neural Network (TWDLNN) and mining based BC prediction system on a Big Data (BD) environment. The proposed paper totally comprises '4' steps: i) pre-processing, ii) Feature Selection (FS), iii) rule mining, and iv) classification. First, the Hadoop Distributed File Systems (HDFS) Map-Reduce (MR) function removes the redundant data, and also the missing attributes are swapped in the pre-processing step. Then, the Levy Flight based Chickens Swarm Optimizations (LFCSO) selects the vital features. Subsequently, the Associations Rule Mining (ARM) process is executed, wherein the CFI is attained. Next, the closed frequent itemset (CFI) is inputted to the TWDLNN algorithm that classifies the inputted data into a normal or cancer patient. In the experimental investigation, the proposed TWDLNN's performance is contrasted with the existing DLNN, ANN, SVM, along with RF-centred on the accuracy as well as execution time metrics.

Key words: Target Weight based Deep Learning Neural Network (TWDLNN), Levy Flight based Chicken Swarm Optimization (LFCSO) algorithm, Hadoop Distributed File System (DFS) and Closed Frequent Itemset (CFI).

1. INTRODUCTION

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Analysis of Terrorist Activities by Using Machine Learning

M. Madhu babu, K. Akhila, S. Harshini, S. Haniya, V. Venkatesh

ABSTRACT

Perhaps the main dangers to the present human improvement is terrorism. Terrorism not just upsets the lawfulness circumstances in a society yet additionally influences the nature of lives of people and makes them stifled genuinely and sincerely and denies them of getting a charge out of life. more the civilizations have progressed, the more individuals are pursuing investigating various systems to shield the humankind from terrorism. Various strategies have been utilized as counterterrorism to secure the existences of people in the public arena and to improve the personal satisfaction by and large. AI strategies have been as of late investigated to create methods for counterterrorism dependent on Artificial Intelligence (AI). Since deep learning has as of late acquired prevalence in AI space, in this paper, these procedures are investigated to comprehend the conduct of psychological militant exercises. Five various models dependent on deep neural network (DNN) are made to comprehend the conduct of fear monger exercises, for example, is the assault going to be effective or not? Or then again if the assault will be self-destruction? Or on the other hand what kind of weapon will be utilized in the assault? Or on the other hand what sort of assault will be completed? Or then again which locale will be assaulted? models are carried out in single-layer neural network (NN), five-layer DNN, and three conventional AI calculations, i.e., strategic relapse, SVM, and Naive Bayes.) performance of theDNNis looked at withNNand the three AI calculations, what's more, it is exhibited that the presentation in DNN is over 95% as far as exactness, accuracy, review, and F1-Score, while ANN and conventional AI calculations have accomplished a limit of 83% precision.)is reasons that DNN is a appropriate model to be utilized for anticipating the conduct of fear monger exercises. Our trials likewise show that the dataset for psychological militant exercises is huge information; in this manner, a DNN is an appropriate model to deal with huge information and comprehend the basic examples in the dataset.

INTRODUCTION

Terrorism is a developing wonder [1], for example it isn't care for terrorism is to occur previously, yet terrorism was going on, is going on and it will occur in future as well. So growing such future fear monger assault expectation model will be valuable which demand military individuals to be ready by giving the data about what kind of assault may occur in which area, its likelihood of occurring, so that there will be some opportunity of forestalling impending psychological oppressor assault by which we can decrease the impacts of an assault like security danger like existence of a casualty and soundness danger like long haul and momentary financial flimsiness of nation being assaulted, framework obliteration, etc. Since security as for life is of high need that must be favorable to vided to every resident of a country by government[2] which infers decrease in wrongdoing exercises. There is a requirement for narrowing the hole among fear based oppressors and counter terrorism by foreseeing future fear monger assaults precisely with the goal that its effect like casualties passing, wounds, mental injury (mental aggravation) can be decreased somewhat and furthermore its effect on conservative dependability can be controlled. This undertaking paper creates a model for ID and counteraction of future fear monger assaults dependent on data accessible. Numerous explores has been done on dissecting terrorism episode information all throughout the planet which may help in recovering a few examples or a significant data which contributes in picking a proper activities to forestall comparative sorts of attacks[1] however couple of examinations have been accomplished for distinguishing and forestalling future assaults as this field has arisen as of late. Some of them are:

Hawkes Process, an interaction that is applied to foresee fear based oppressor assaults in Northern Ireland which considered 5000 blasts running between year 1970-1998. The cycle was utilized to break down when and where the Irish Republicans Army (IRA) dispatched the assault, how British security powers reacted and how viable these reactions were. [3].

Social Network Analysis (SNA) whose objective was to debase the lethality of fear network for example what happens when psychological militant is eliminated from network. (I) Quantifying fear network lethality (ii) Predicting replacement of eliminated psychological militant (iii) Identifying whom to eliminate. What's more, a portion of the exercises completed are phony record, online media misrepresentation, malware distribution [4]

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Text Classification on twitter data

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ABSTRACT

Sentiment analysis is a classification problem where the main focus is to predict the polarity of words and then classify them into positive or negative sentiment. Classifiers used are of mainly two types, namely lexicon-based and machine learning based. The former include Sent WordNet and Word Sense Disambiguation while the latter include Multinomial Naive Bayes(MNB), Logistic Regression(LR), Support Vector Machine(SVM) and RNN Classifier. In this paper, existing datasets have been used, the first one from "Sentiment140" from Stanford University, consisting of 1.6 million tweets and the other one originally came from "Crowd flower's Data for Everyone library",consisting of 13870 entries, and both datasets are already categorised as per the sentiments expressed in them. Textblob, Sentiwordnet, MNB, LR, SVM and RNN Classifier are applied on the above dataset and a comparison is drawn between the results obtained from above mentioned sentiment classifiers, classifying tweets according to the sentiment expressed in them, i.e.,sspositive or negative. Also, along with the machine learning approaches, an ensemble form of MNB, LR and SVM has been performed on the datasets and compared with the above results. Further the above trained models can be used for sentiment prediction of a new data.

Key words: Twitter; sentiment analyzer; machine learning; WordNet; word sequence disambiguation (WSD); Naïve Bayes.

INTRODUCTION

In most recent years, a gigantic wide assortment of people have been drawn to long range interpersonal communication frameworks like Facebook, Twitter and Instagram. Most utilize social sites to straight out their feelings, convictions or assessments about things, areas or characters. Strategies for estimation assessment can be marked overwhelmingly [1] as AI [2], Lexicon-based [3] and cross breed [4,5]. Also, some other arrangement has been presented [6] with the classes of measurable, information based and crossover draws near. There is a house for performing troublesome examination in huge regions with the guide of computationally inspecting suppositions and feelings [7]. Accordingly, a progressive exercise has developed to separate the insights from measurements available on interpersonal organizations for the expectation of a political decision, to use for informative purposes, or for the fields of business, discussion and advertising. The exactness of opinion assessment and forecasts can be gotten by utilizing conduct assessment dependent on informal communities [8]. To uncover the perspectives on the heads of two monstrous popularity based occasions in India [9], data used to be accumulated from the public bills of Twitter. Assessment Lexicon [10] was once used to track down an entire amount of positive, unprejudiced and awful tweets. Discoveries display that looking at the public perspectives should help political occasions genuinely change their systems. A catchphrase based tweet assortment, focused on the names of the political occasions and political VIPs of India [11], was once made to investigate the acknowledgment of the birthday festivity for the appointment of 2013.This dataset was once analyzed with each directed and solo AI calculations. It utilized the Rainbow gadget [12] and used Print, K closest neighbors (KNN) [13], and Naïve Bayes (NB) [14] arrangement strategies on unigram information. The equivalent dataset used to be inspected the utilization of directed AI calculations which have been support vector machines (SVM), NB, irregular forest (RF) [15] and Naïve Bayes multinomial NBMN [16]. For the reason for smoothing the records through getting rid of zero qualities, it utilized Laplace and Porter stemmer [17,18]. Term recurrence backwards report recurrence (TF–IDF) [19] used to be used for the explanation of finding firmly related expressions for relevant archives. It moreover used 5-overlay pass approval the utilization of the Waikato Environment for Knowledge Analysis (Weka) [20,21]. The essential explanation of picking Twitter's profile realities is that we can get subjective records from this stage because of the reality Twitter contains the verified cash owed of legislators, which is presently not the situation of Facebook or Instagram and so forth Moreover, through qualification with Facebook, Twitter limits clients to give their minimal and whole conclusions in 280 characters. Ongoing examination has confirmed [22,23] that with Twitter it is feasible to get individuals' insight from their profiles as opposed to run of the mill approaches of securing realities about discernments. Moreover, creators of [24] proposed a calculation for abusing the contemplations from tweets while considering a monster size of measurements for assumption investigation. To see social networks with compelling effect, a novel methodology was once proposed via [25] and applied by utilizing allotting metric expense to everything about client's enthusiastic posts. Hence, the commitment of this paper comprises of the assessment of political decision suppositions

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AN AUTOMATED SYSTEM TO LIMIT COVID19 USING FACIAL MASK DETECTION

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ABSTRACT

Face Detection has evolved as a very popular problem in Image processing and Computer Vision. Many new algorithms are being devised using convolutional architectures to make the algorithm as accurate as possible. These convolutional architectures have made it possible to extract even the pixel details. We aim to design a binary face classifier which can detect any face present in the frame irrespective of its alignment. We present a method to generate accurate face segmentation masks from any arbitrary size input image. Beginning from the RGB image of any size, the method uses Predefined Training Weights of VGG - 16 Architecture for feature extraction. Training is performed through Fully Convolutional Networks to semantically. Segment out the faces present in that image. Gradient Descent is used for training while Binomial Cross Entropy is used as a loss function. Further the output image from the FCN is processed to remove the unwanted noise and avoid the false. Predictions if any and make bounding box around the faces. Face Mask Detection system built with OpenCV, Keras/Tensor Flow using Deep Learning and Computer Vision concepts in order to detect face masks in static images as well as in real-time video streams.

INTRODUCTION

A new strain which has not previously been identified in humans is novel coronavirus (nCoV). Coronaviruses (CoV) are a wide group of viruses which cause illness that range from colds to deadly infections like Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) [1]. The first infected patient of coronavirus has been found in December 2019. From that period, COVID-19 has become a pandemic all over the world [2]. People all over the world are facing challenging situations due to this pandemic. Every day a large number of people are being infected and died. At the time of writing this paper, almost 16,207,130 infected cases have been confirmed where 648,513 are death [3]. This number is increasing day by day. Fever, dry cough, tiredness, diarrhea, loss of taste, and smell are the major symptoms of coronavirus which is declared by the World Health Organization (WHO) [4]. Many precautionary measures have been taken to fight against coronavirus. Among them cleaning hands, maintaining a safe distance, wearing a mask, refraining from touching eyes, nose, and mouth are the main, where wearing a mask is the simplest one.

COVID-19 is a disease that spread from human to human which can be controlled by ensuring proper use of a facial mask. The spread of COVID-19 can be limited if people strictly maintain social distancing and use a facial mask. Very sadly, people are not obeying these rules properly which is speeding the spread of this virus. Detecting the people not obeying the rules and informing the corresponding authorities can be a solution in reducing the spread of coronavirus.

Face mask detection is a technique to find out whether someone is wearing a mask or not. It is similar to detect any object from a scene. Many systems have been introduced for object detection. Deep learning techniques are highly used in medical applications [5], [6]. Recently, deep learning architectures [7] have shown a remarkable role in object detection. These architectures can be incorporated in detecting the mask on a face. Moreover, a smart city [8] means an urban area that consists of many IoT sensors to collect data. These collected data are then used to perform different operations across the city. This includes monitoring traffic, utilities, water supply network, and many more. Recently, the growth of COVID-19 can be reduced by detecting the facial mask in a smart city network.

This paper aims at designing a system to find out whether a person is using a mask or not and informing the corresponding authority in a smart city network. Firstly, CCTV cameras are used to capture real time video footage of different public places in the city. From that video footage, facial images are extracted and these images are used to identify the mask on the face. The learning algorithm Convolutional Neural Network (CNN) is used for feature extraction from the images then these features are learned by multiple hidden layers. Whenever the architecture identifies people without face mask this information is transferred through the city network to the corresponding authority to take necessary actions. The proposed system appraised promising output on data collected from different sources. We also represented a system that can ensure proper enforcement of the law on people who are not following basic health guidelines in this pandemic situation.

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International Journal of Scientific Research and Reviews

The Impact of Three Phase Soft Starter Controller on Asynchronous Machine Response to Transients using MATLAB/Simulink

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ABSTRACT

This paper illustrates the impact of three phase soft starter controller during transients on an asynchronous machine in MATLAB/SIMULINK. It was intended by resolving the various challenges inherent in the dynamic operation of asynchronous motors during motor start up. Just as an advancement of three phase soft starter controller and its application for the motor operational control, the proposed strategy arrangement incorporate thorough numerical model of asynchronous motor and comparison was made with the impact of three phase soft starter controllers on machines performance in unfaltering state and dynamic state conditions. The effect of sudden variation of voltage at particular firing angle effects the speed, current and torque along with the starting inrush currents and starting torque pulsations are analyzed at different firing angles in simulation.

KEYWORDS:soft starter controller, asynchronous machine, dynamic state, inrush currents.

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(19) INDIA

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(21) Application No.202041048126 A

(43) Publication Date : 13/11/2020

(54) Title of the invention : LOW POWER LNA-MIXER CIRCUIT FOR RADIO FREQUENCY FRONTEND RECEIVER

(51) International classification	:H04W 52/02	(71)Name of Applicant :
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(33) Name of priority country	:NA	2)Dr.B.K.Madhavi
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(61) Patent of Addition to Application Number Filing Date	:NA :NA	2)Dr.B.K.Madhavi
(62) Divisional to Application Number Filing Date	:NA :NA	

(57) Abstract :

ABSTRACT : Title: Low Power LNA-Mixer Circuit for Radio Frequency Frontend Receiver The present disclosure proposes a low power LNA-Mixer circuit 100 design for 5G Wi-Fi frontend receiver which comprises of a differential low noise amplifier circuit 101 merged with a mixer circuit 102 and a shunt current path 103 is connected to the merged circuit of the differential low noise amplifier circuit 101 and the mixer circuit 102. The shunt current path 103 consists of two LC tank circuit linked to two PMOS transistors. The differential low noise amplifier circuit 101 recycles the current flow from the mixer circuit 102 due to the reduction in the width of the MOSFETs of the differential low noise amplifier circuit and RF transistors of the mixer circuit 102 through the single shunt current path 103 and thereby reduces the overall static power consumption without compromising the gain of the low power LNA-Mixer circuit 100.

No. of Pages : 17 No. of Claims : 6

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/07/2021

(21) Application No.202141032508 A
(43) Publication Date : 30/07/2021

(54) Title of the invention : RELIABLE BIDIRECTIONAL DC-DC CONVERTER CIRCUIT WITH SINGLE INDUCTOR

(51) International classification	:H02M0003158000, H02M0001000000, H02M0003335000, H02M0001440000, H02M0001320000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT : Title: Reliable Bidirectional DC-DC Converter Circuit with Single Inductor The present disclosure proposes a bidirectional DC-DC converter circuit with single inductor that aids to reduce the number of individual capacitors for every switch in the clamping circuit. The proposed converter circuit has enhanced reliability and life. Further, the proposed converter minimizes the switch voltage stresses in the converter and thereby improve the performance of the converter. The size, weight and volume of the converter are reduced to thereby reduce the overall cost. The bi-directional DC-DC converter is suitable for high power applications.

No. of Pages : 13 No. of Claims : 6

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PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :19/09/2020

(21) Application No.202041040671 A

(43) Publication Date : 25/09/2020

(54) Title of the invention : MANUALLY OPERATED MULTI-LEVEL MODULAR BRICK MOULDING APPARATUS

(51) International classification :E04B1/16
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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8)Podugu Gayathri

(57) Abstract :
ABSTRACT: Title: Manually Operated Multi-level Modular Brick Moulding Apparatus The present disclosure proposes a multi-level modular brick moulding apparatus that comprises multiple moulding units for moulding bricks with a manual or mechanical operating mechanism to produce more number of bricks at a time with different sizes at nominal cost. The multi-level modular brick moulding apparatus 700 comprises a frame assembly 701, plurality of moulding units 702, a rack operating unit, and an apparatus shifting unit 705. The multi-level modular brick moulding apparatus is operable either manually or automatically and is less complex in construction. The multi-level modular assembly of brick moulding apparatus is detachable where each moulding unit is organized at predefined spaces that can be attached and detached using a locking mechanism on the frame assembly. The multi-level moulding apparatus is easy to shift, occupies moderate space, and is of moderate cost. The proposed multi-level moulding apparatus requires less maintenance and is free from rust.

No. of Pages : 20 No. of Claims : 7

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(19) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :21/07/2020

(21) Application No.202041031038 A
(43) Publication Date : 31/07/2020

(54) Title of the invention : PORTABLE WATER PURITY MONITORING SYSTEM AND METHOD THEREOF

(51) International classification	:C02F 1/00
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
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(62) Divisional to Application Number	:NA
Filing Date	:NA

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7)T.Vishnu Murthy

(57) Abstract :
ABSTRACT: Title: Portable Water Purity Monitoring System and Method Thereof The present disclosure discloses a portable water purity monitoring system that measures, compares, integrates water purity parameters individually, and displays the water quality information such as drinkable, moderate, and non-drinkable to the individual. The system further incorporates an external adjustment feature which allows the individual to adjust span as required. The system 100 comprises of plurality of sensing means 101, a level adjusting means 102, a parameter estimating means 103, a display means 104, a comparing means 105, an indicating means 106, and an external adjusting means 107. The system helps in enhancing the quality, purity, taste, and healthy. The proposed system is economical and can be operated by any individual.

No. of Pages : 16 No. of Claims : 10

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(19) INDIA
(22) Date of filing of Application :20/01/2020

(21) Application No.202041002415 A
(43) Publication Date : 31/01/2020

(54) Title of the invention : 3D HAPTIC GRIPPER USING MAGNETO-RHEOLOGICAL (MR) BRAKES FOR TELEMEDICINE APPLICATIONS

(51) International classification :G06F0003010000,G06F0003041000,G06F0003048800,B25J0013020000,G06Q0020380000
(31) Priority Document No :NA
(32) Priority Date :NA
(33) Name of priority country :NA
(86) International Application No :NA
Filing Date :NA
(87) International Publication No : NA
(61) Patent of Addition to Application Number :NA
Filing Date :NA
(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :
Haptic devices are used to interface human and computers to interact each other by force and touch. These devices used widely in for telemedical applications, where virtual and remote interactions are necessary. With the help of wearable haptic devices, humans can step inside a virtual environment and feel it as real with same touch feeling. Most of the haptic devices are based on point interaction and 2D alignments only.3D haptic grippers are used in surgical robots where; remote 3D touch sensitive applications are required. 3D haptic grippers consist of two rotary Magneto-Rheological (MR) brakes for grasping and rolling. The brakes are applied and rolled when receiving input from sensors. The grasping and approach forces and rolling torque can be reflected on human operator. By controlling the parameters of sensors, the movement of multiple fingers with 5 degrees of freedom (DOF) can be achieved. The 3D haptic gripper consists of four fingers with four bar mechanisms to connected by 8 MR brakes to replicate human hand gestures. The size of the gripper can be adjusted based on the hand size of the human operator.

No. of Pages : 10 No. of Claims : 6

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(19) PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :27/12/2019

(21) Application No.201941054078 A

(43) Publication Date : 03/01/2020

(54) Title of the invention : WATER HARVESTING CULVERT STRUCTURE TO RECHARGE GROUND WATER

(51) International classification :E03B0003340000,E01F0005000000,A01G0025020000,E02B0011000000,E03F0003060000

(31) Priority Document No :NA

(32) Priority Date :NA

(33) Name of priority country :NA

(86) International Application No :NA

Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA

Filing Date :NA

(62) Divisional to Application Number :NA

Filing Date :NA

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(57) Abstract :
ABSTRACT: Title: Water Harvesting Culvert Structure to Recharge Ground Water The present disclosure discloses a water harvesting culvert structure that aids to recharge the ground water. The water harvesting culvert structure 100 comprises a simple canal construction. The simple canal construction comprises of a left side section 101, a right side section 102, a conduit section 103, and plurality of drip irrigation pipes 104. The water harvesting culvert structure with a simple canal construction aids to recharge the groundwater using household waste water. The water harvesting culvert structure acts as a channel for waste water to flow to the street sewage pipeline and at the same time recharge the underground water. The water harvesting culvert structure drains the household waste water into the soil through drip irrigation pipes to recharge the underground water efficiently. The water harvesting culvert structure can be installed near every house to utilize regular waste water from households to recharge underground water.

No. of Pages : 13 No. of Claims : 5

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PATENT APPLICATION PUBLICATION

(19) INDIA

(21) Application No.201941049772 A

(22) Date of filing of Application :03/12/2019

(43) Publication Date : 13/12/2019

(54) Title of the invention : ARTIFICIAL LIGHT POWER GENERATING SOLAR PANEL SYSTEM

(51) International classification	:F21S9/03
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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6)Reddi Chiru deepu

(57) Abstract :

ABSTRACT: Title: Artificial Light Power Generating Solar Panel System The present disclosure discloses an artificial light power generating solar panel system that generates electricity from artificial light sources such as LED bulbs or any other light sources and supplies electricity back to the light source thereby providing a consistent artificial light power generation system. The artificial light power generating solar panel system 100 comprising of an artificial light source 101, a solar cell module 102, a power transmitting module 103, and a light source module 104. The artificial light power generating solar panel system 100 comprises various applications such as hot water systems, preparation of potable, brackish or saline water, cooking, drying and pasteurization of food materials. The artificial light power generating solar panel system 100 is maintained at low cost thereby aids to reduce the electricity bills.

No. of Pages : 12 No. of Claims : 4

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PATENT APPLICATION PUBLICATION

(19) INDIA

(22) Date of filing of Application :03/11/2019

(21) Application No.201941044504 A

(43) Publication Date : 29/11/2019

(54) Title of the invention : MULTI-INPUT REVERSE FLYBACK CONVERTER

(51) International classification	:H02M3/33
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
ABSTRACT: Title: Multi-Input Reverse Flyback Converter The present disclosure discloses a multi-input reverse flyback converter 100 with a switching circuit produces continuous output voltage from discontinuous input voltages received from multiple input sources. The circuit comprises plurality of DC input power sources 101, a multi-input DC-DC switching means 102, a power transformer 103, a power converting means 104, a switching circuit, primary switch 105 and secondary switch 106. The multi-input DC-DC switching means 102 processes and provide single DC power supply in a normalized way. The secondary switch 106 connected to the negative terminal of switching circuit aids to control the output voltage selectively over a wide range and extend the range of stable operation. The primary switch 105 connected in series with a reverse current blocking diode to the positive terminal of the switching circuit helps in avoiding power loss during reverse flow. The multi-input reverse flyback converter 100 circuit can be used in any type of high power, electric vehicles and micro grid applications. Fig 1.

No. of Pages : 16 No. of Claims : 10

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ATENT APPLICATION PUBLICATION (21) Application No.201941035898 A
INDIA
(22) Date of filing of Application :06/09/2019 (43) Publication Date : 20/09/2019

(54) Title of the invention : A SYSTEM AND METHOD FOR PERSONALIZED LIGHTING SYSTEM WITH SLIDING RAIL APPARATUS

(51) International classification	:H05B37/00	(71)**Name of Applicant :**
(31) Priority Document No	:NA	**1)DR.K.SUBBARAMAIAH**
(32) Priority Date	:NA	Address of Applicant :PROFESSOR, DEPARTMENT OF
(33) Name of priority country	:NA	EEE, LENDI INSTITUTE OF ENGINEERING AND
(86) International Application No	:NA	TECHNOLOGY, JONADA, VIZIANAGARAM, ANDHRA
Filing Date	:NA	PRADESH - 535005 Andhra Pradesh India
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(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :
In our modern days we have everything in technology-wise of using the things but coming to electrical appliance in-home commercial building like light, fan etc. are fixing as stable and in-ceiling of building place these appliance were not in use due to proper location not fixing in the hall or room, in building this appliance are still In stable and running its operations of human absence or some modification changes happening in building in shape structure or demolishing the building the whole electrical connection is rolled out and cant able to reuse of it so huge amount of money will get lost. In some house or building™s hall is large we fix light in ceiling or wall it is stable so it gives light in that place only it can™t cover the entire place and people sitting area, in order to overcome this we just have technology of the personalized lighting system with sliding rail apparatus in-wall or celling. it can be automatically moving to anywhere on wall or ceiling through the remote control or automatic manner or voice commands can activate and operate the electrical appliance. So, it gives effective light source wherever required in the house. And it also reduces the wastage of electrical power.

No. of Pages : 16 No. of Claims : 7

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(12) PATENT APPLICATION PUBLICATION (21) Application No.202141035211 A

(19) INDIA

(22) Date of filing of Application :04/08/2021 (43) Publication Date : 13/08/2021

(54) Title of the invention : MACHINE LEARNING BASED WIRELESS NETWORK MODELING BASED ON GENETIC ALGORITHM FOR ROBOTIC APPLICATION

(51) International classification	:H04L0012761000, H04W0064000000, B25J0009160000, G06N0005000000, G05B0019406000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:PCT// :01/01/1900
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
This invention is used to implement the general machine learning model for access point positioning in reconfigurable wireless networks for robotic application. A vector of RSSI values from wireless connection points is directed by the robot at a specific position. The localization algorithm routines this vector and compares it to the several vectors of RPs stored in the database to find the nearest one and, as a result, guesses the robot position. To figure out where the robot is, a variety of algorithms can be used. The Euclidean interval between the elements of the RSSI vector guided away from the robot and the elements of all RP RSSI vectors stored in the database. The measured robot position is calculated by a series of adjacent RPs consuming minutest Euclidean distances to reduce the localization error. These are known as the k Nearest Neighbor (kNN) or the weighted k Nearest Neighbor methods (WkNN). There are numerous things that necessity be intended in spread over simulated annealing algorithm. The multi-objective genetic algorithm is used to resolve the access point placement problem. The resolution of this access point placement problem is to recognize the optimal configurations for several situations in the amount of access points concurrently. A multicast routing algorithm using Cerebellar Model Articulation Controller (CMAC), a form of ANN, has been devised to forecast the likelihood of route as well as node disconnection to aid in the selection of better routes.

No. of Pages : 13 No. of Claims : 5

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :17/08/2021
(21) Application No.202141037223 A
(43) Publication Date : 27/08/2021

(54) Title of the invention : IOT BASED ENHANCED HYBRID MOBILE MESH AD-HOC WIRELESS NETWORK FOR REBROADCASTING OF DATA PACKETS

(51) International classification	:H04W0084180000, H04W0088160000, H04W0040020000, H04L0012180000, H04W0012060000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The MANET (Mobile AD-HOC Network) is combined with a long-range network such that a wireless terminal can decide whether to rebroadcast a geocast packet. A wireless terminal closes to or within the geocast region can rebroadcast on the MANET, whereas a wireless terminal far from the geocast region can rebroadcast on the long-range network also is an architectural solution in which standalone ad-hoc network cells are used as an extension of the backbone infrastructure in terms of network architecture and its service capabilities is provided. These Ad-Hoc networks will integrate to the Internet via cellular and other available access networks. This integration creates new network operators and ISP's. In its extended architecture, it is envisaged that the mobility issues are handled by utilizing the IP mobility capabilities, taking into account the mobile mesh Ad-Hoc specific requirements. The mobile mesh Ad-Hoc network is established. The mobile mesh Ad-Hoc network is a hybrid network that supports features of conventional Ad-Hoc and infrastructure networks such as fixed and mobile networks. The dynamically configurable hybrid network, which consists of mobile and fixed network subsystems, and nodes/routers can make it possible for subscriber terminal to setup a seamless radio communication access to both the radio access network subsystems and to the other mobile nodes.

No. of Pages : 11 No. of Claims : 5

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(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :29/08/2021

(21) Application No.202141039098 A
(43) Publication Date : 10/09/2021

(54) Title of the invention : ARTIFICIAL INTELLIGENCE BASED AUTOMATED DATA SECURITY AND ASSISTANCE SYSTEM

(51) International classification	:G16Z0099000000, G10L0013080000, G06F0003160000, G06F0009440000, G06F0016000000
(31) Priority Document No	:NA
(32) Priority Date	:NA
(33) Name of priority country	:NA
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA

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(57) Abstract :
Our invention focuses on using AI based Programming is an intelligent automated assistant system engages with the user in an integrated, conversational manner for data security. The invention invokes external services when appropriate to obtain information or perform more than three actions and system can be implemented using any of a number of different platforms, such as the web, email, smartphone. The invented technology also includes the system is based on sets of interrelated domains and tasks and employs additional functionally powered by external services with which the system can interact the use if unknown user delete the data the auto store the unknown location in memory if the device is connected into a internet the data auto store the user e mail and link share the reg mobile no. The invention is a computer-implemented service analyzes purchase histories and other types of behavioral data of users on an aggregated basis to detect and quantify associations between particular items represented in an electronic catalog. The invention is also including an each of the controller non-volatile memory and biometric scanner system may be mounted in a base of the portable device with the biometric system having an exposed surface on a top portion of the base for accepting biometric data such as a password, voice and fingerprint

No. of Pages : 12 No. of Claims : 5

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PATENT APPLICATION PUBLICATION

(19) INDIA

(21) Application No.201941046021 A

(22) Date of filing of Application :12/11/2019

(43) Publication Date : 29/11/2019

(54) Title of the invention : POWER GENERATION USING SWING MOTION ENERGY

(51) International classification	:B63H19/02	(71)**Name of Applicant :**
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(33) Name of priority country	:NA	(72)**Name of Inventor :**
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Filing Date	:NA	**2)Dr.Dwivedula Venkata Ramamurthy**
(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present disclosure provides a system which harvests energy by utilizing children"s energy (mechanical energy) at whatever point they play i.e., on standard playing types of gear like seesaw or teeter-totter, swing, slider, etc., and then converts it into electrical energy. The system comprises of a swing means and an energy harvesting means. The energy harvesting means further comprises a sprocket, a gear box, an energy transmission means and a storage means. The system is used to produce power and as well as to increase the usage of power effectively. The electrical energy transmitted from the dynamo is stored in a battery or cell which further can be utilized for multiple applications such as sign lights (LED™s), mobile charging and the like.

No. of Pages : 15 No. of Claims : 6

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