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VEMANA
INSTITUTE OF TECHNOLOGY

ICRTET – 18

INTERNATIONAL CONFERENCE ON RECENT TRENDS IN ENGINEERING & TECHNOLOGY

Bengaluru, Karnataka

20th – 21st June, 2018

Organized by:

Vemana Institute of Technology (VIT)

and

Institute For Engineering Research and Publication

From Director's Desk ….

Rudra Bhanu Satpathy.,
Director,
Institute For Engineering Research and Publication.

On behalf of ***Institute For Engineering Research and Publications (IFERP)*** and in association with ***Vemana Institute of Technology,*** Bengaluru, Karnataka. I am delighted to welcome all the delegates and participants around the globe to ***Vemana Institute of Technology, Bengaluru, Karnataka*** for the ***"International Conference on Recent Trends in Engineering & Technology (ICRTET-18)"*** Which will take place from ***20th -21st June'18***

Transforming the importance of Engineering, the theme of this conference is ***"International Conference on Recent Trends in Engineering & Technology (ICRTET-18)"***

It will be a great pleasure to join with Engineers, Research Scholars, academicians and students all around the globe. You are invited to be stimulated and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a variety of disciplines.

I congratulate the reviewing committee, coordinator **(IFERP &VIT)** and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at ***Bengaluru, Karnataka.***

Sincerely,

Rudra Bhanu Satpathy

Preface

The **"*International Conference on Recent Trends in Engineering & Technology"*** is being organized by ***Vemana Institute of Technology,*** Bengaluru, Karnataka in association with ***IFERP-Institute for Engineering Research and Publications*** *on the 20th – 21st June, 2018.*

Vemana Institute of Technology has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Koramangala in Karnataka.

The **"*International Conference on Recent Trends in Engineering & Technology"*** was a notable event which brings academia, researchers, engineers, industry experts and students together.

The purpose of this conference is to discuss applications and development in area of **"Engineering & Technology**" which were given international values by ***Institute for Engineering Research and Publication (IFERP).***

The International Conference attracted over 253 submissions. Through rigorous peer reviews 123 high quality papers were recommended by the Committee. The Conference aptly focuses on the tools and techniques for the developments on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our Management for their wholehearted support and encouragement. We thank our Principal for his continuous guidance. We are also thankful for the cooperative advice from our advisory Chairs and Co-Chairs. We thank all the members of our local organizing Committee, National and International Advisory Committees.

ICRTET-18

Sri H N Vijayaraghava Reddy,
President KRJS,
Chairman-Governing Council,
Vemana IT

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President's Message

It is a great pleasure for me to congratulate all the participants in the **International Conference on Recent Trends in Engineering & Technology (ICRTET-2018)** in association with the **Institute For Engineering Research and Publication (IFERP)** at Vemana Institute of Technology, Koramangala, Bengaluru, Karnataka and to welcome the participants who have to exchange experience.

Engineering &Technology plays vital role in the modern life, profoundly influencing the course of human civilization. All the great scientific discoveries and Information technological achievements in our country have improved the Indian economic status and have created many new ways to the new generations to grow in the technologically advanced environment.

The main goal of the conference is to educate and motivate the participants to develop skill dynamics which must be the high priority of Indian technical education for Engineering &Technology development in our country in extraordinary manner. We will Endeavour to provide the best through lectures, paper presentation and students activities which will be a part of this conference. Speakers and prominent figures in various technical fields have been invited for sharing their latest insights of academic and research in Engineering &Technology.

(**Sri H N Vijayaraghava Reddy**)

Sri D.N. Lakshmana Reddy,
Vice President, KRJS

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Vice President's Message

It gives me immense pleasure to know that the Vemana Institute of Technology has taken up the great challenge of organizing an **International Conference on Recent Trends in Engineering & Technology (ICRTET-18)** in association with **Institute For Engineering Research and Publication (IFERP)**. I congratulate the department for their maiden attempt for holding the conference and I am happy with the revered publication of articles.

The facets of Engineering &Technology are changing very fast. Hence Science and Technology has to be infused with new variety to play a decisive and beneficial role in advancing the well-being of all sections of our society. The **ICRTET-18** will play a humble role in bring together researchers, young scientists and students in an informal environment for discussing the latest advances in the field of Computer Science and Communication Technology.

Visit of various researches under the roof of Vemana Institute of Technology is a matter of pride and immense pleasure to all of us. I hope that this volume which has been brought out by **ICRTET-18** will be of great academic value for common scholars and common readers. I convey my blessings and good wishes to all members of the **ICRTET-18** family, for their dedicated involvement in this great event.

Since its inception Vemana Institute of Technology is moving towards the heights of education and serving the society with quality education.

(**Sri D.N. Lakshmana Reddy**)

Sri G.N. Munivenkatappa,
Vice President, KRJS

KARNATAKA REDDYJANA SANGHA ®
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INSTITUTE OF TECHNOLOGY

Vice President's Message

It is great pleasure for me to congratulate all the participants in the **International Conference on Recent Trends in Engineering & Technology (ICRTET-18)** jointly organzied by **Institute For Engineering Research and Publications (IFERP)** and **RDTC Vemana Institute of Technology** and welcome the participants who have to come to here to exchange experience.

The topics covered by the Conference plays vital role in the modern life, profoundly influencing the course of human civilization. All the great scientific discoveries and information technological achievements in our country have improved the Indian economic status and have created many new ways to the new generations to grow in the technologically advanced environment.

The main goal of the conference is to educate and motivate the participants to develop skill dynamics which must be the high priority of Indian Higher education for the development of various technologies in our country in extraordinary manner. We will endeavour to provide the best through lectures paper presentations and students activities which will be a part of this conference. International speakers and prominent figures in various technical fields have been invited for sharing their latest insights of academic and research in various disciplines.

I feel very much delighted to inform you that International Conference on Applied Sciences, Engineering, Technology and Management (ICRTET-18) will provide innovative outcome to face the emerging challenges in different disciplines. I congratulate all the staff members of the conference who enthusiastically took these efforts. I whole heartedly appreciate the sincere efforts of the entire team of this great event. I wish them all a grand success!

(**Sri G.N. Munivenkatappa**)

Dr Vijayashima Reddy B G,
Principal, Vemana IT

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Principal Message

Greetings from Vemana Institute of Technology, Koramangala, Bengaluru, Karnataka

On behalf of the management and staff, I would like to invite all of you to the International Conference.

I am glad to inform you that the **International Conference on Recent Trends in Engineering & Technology (ICRTET-18)** at Vemana Institute of Technology in association with the institute For Engineering Research and Publication (IFERP).

The International Conference (ICRTET-18) aims to focus on applications and will be of interest to students, academicians, industrialists and others. The conference has an array of sessions dedicated to various application themes and several invited talks by experts from India and abroad. The papers contributed will be comprehensively administered to appear in IFERP journal.

I wish all the best to the participants and the organizing committee of the said conference, who have put lots of efforts for successful organization of this International Conference.

I wish you all the best.

(**DrVijayashima Reddy B G**)

Sri Ln. Er. Muninagappa,
General Secretary, KRJS

KARNATAKA REDDYJANA SANGHA ®
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General Secretary Message

It gives me immense pleasure to pen that Vemana Institute of Technology is organizing an **International Conference on Recent Trends in Engineering & Technology (ICRTET-18)** in association with the Institute For engineering research and publication (IFERP) on 20th and 21st June 2018. The applications of any advances Engineering & Technology is to facilitate the nation for its development.

The conference is aimed to serve as a premier venue for the dissemination of leading edge research in **Engineering & Technology.**

I hope that this conference would certainly light up innovative ideas by paving way to new inventions and integrate new technologies in the Engineering & Technology sector and the deliberations in the conference will help researchers from academia, industry and the conference will provide a platform for initiating collaborative research projects.

All the best.

(**Sri Ln. Er. Muninagappa**)

Sri Shekar Reddy,
Joint Secretary, KRJS

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Joint Secretary Message

I congratulate Vemana Institute of Technology for holding this **International Conference on Recent Trends in Engineering & Technology (ICRTET-18**) on 20th – 21st June 2018. This international conference that is being organized in the institute. I am sure about the conference that it will serve an effective platform for the technocrats to share their ideas and research. I always encourage to such type of event, which eventually make the society technology aware.

I wish every success to the conference.

(Sri Shekar Reddy)

Sri. N. Somashekhar Reddy,
Joint Secretary, KRJS

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Joint Secretary Message

It feels proud to mention here that the Vemana Institute of Technology is organizing International Conference on Recent Trends in Engineering & Technology (ICRTET-18) on 20^{th} – 21^{st} June 2018.

I am confident that this conference would also see the galaxy of technocrats, researchers, and professional in the field of civil engineering and will share their knowledge and wisdom.

I wish lots of success to the conference.

(Sri. N. Somashekhar Reddy)

Sri. K M Krishna Reddy,
Treasurer, KRJS

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Treasurer Message

Aiming to learn about the latest development and situation in all aspects of Engineering and Technology and to understand the advent of new technologies in it, Two days " International Conference on Recent Trends in Engineering & Technology (ICRTET-18) is being organised by Vemana Institute of Technology , Koramangala, Bengaluru on 20th and 21st June 2018 at Vemana Institute of Technology , Koramangala, Bengaluru, in association with Institute For Engineering Research and Publication (IFERP).

The aim of conference is to provide an opportunity for exchanging technological advancement and scientific research in the Engineering and Management and bring Engineers, Researchers, Academician, Scientist, Practicing Engineers, Policy Makers in Management, Industrialist on a single platform for the brainstorming of the fruitful experiences and ideas.

The paper presented in these proceedings are the product of Researchers, Academician ,Scientist, Practicing Engineers, Policy Makers in Management and Industrialist and they have been organized from different streams of engineering and management. The seminar proceeding along with CD contains the technical papers from Researchers, Academician, Industrialist, students etc. the conference has good opportunity for the participants coming from different places of India to present and discuss topics in their respective research area.

I would like to thank all the participants for their contribution to the conference proceedings. Behind the success of the whole work, I cannot forget the unconditional support of all the HOD, faculty members, committee members of VIT and IFERP.

(Sri. K M Krishna Reddy)

ICRTET -18

International Conference on Recent Trends in Engineering & Technology

Keynote Speakers

Dr. Vijay Tharad.,

Director Operations at Corporate Professional Academy
Technical Training & Career Development
Mechanical or Industrial Engineering

BIOGRAPHY

Dr. Vijay Tharad is currently Director Operations at Corporate Professional Academy for Technical Training and Career Development and caters to the Technical Training needs of employees of corporate world and provides consultancy services to Universities and Engineering Colleges for Career development of engineering students for smooth switch over from Academic world to corporate culture and work ethics. He has recently retired from Multinational Company Caterpillar India Private Limited after serving them for over 25 years where he was Chief Technical Training consultant for Cat products mainly Diesel Engine, Generator sets and Heavy Earth Moving Machines.

Vijay Tharad has an extensive background in diesel engine, modern electronic controlled diesel engine and latest after treatment technology since 1989. He was involved with training thousands of Cat employees and other corporate employees on emission control systems to help diesel and alternative combustion engines meet future regulated limits. He has authored training material on Diesel Emissions and Their Control, a comprehensive handout, and continues to present seminars in diesel engine technology, selective catalytic reduction for diesel engines, and exhaust gas recirculation.

Mr.Murali Sundaram

Technology Bricoleur, Emerging & Innovation Technologies

BIOGRAPHY

I have developed technology strategies for organizations / clients to adopt emerging trends, Design thinking, Block Chain adoption, Ideation, Reverse Innovations, Crowd Sourcing, and Start-ups integration

I have enabled emerging technologies in Mobile, Big Data, Internet of things, Chatbots, Wearable computing, VR /AR adoption and 3D printing integrating vendor solutions with practice solutions. I have lead technology modernization initiatives for with key focus on emerging technologies

I have actively proliferating disruptive innovations and emerging technologies with colleges and universities. I have helped them setup labs in the respective areas (Cloud, IoT, 3D printing, Immersive experience, Software Engineering or even in Innovation labs). I am actively evangelizing these aspects in conferences, workshops, and professional forums and blogging about it.

My twenty plus years of professional network is rich with technologists, practitioners, executive leaders, serial entrepreneurs, innovators and academicians

(Mr.Murali Sundaram)

ICRTET -18

International Conference on Recent Trends in Engineering & Technology

Bengaluru, Karnataka, June 20th - 21st, 2018

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ABSTRACTS

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Secure Encryption and Deduplication of Data in Cloud

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Abstract:--

Secure encryption in cloudis achieved using Attribute based encryption (ABE), where a data provider sends his/her encrypted data to a cloud service provider(CSP) and can share the data with users possessing specific credentials. A scheme based on attribute-based encryption (ABE)is used to deduplicate encrypted data stored in the cloud and support safe data access control at the same time. Analysis and implementation demonstrate that the scheme is secure, effective, and efficient. However, the standard ABE system does not support secure deduplication, which is important for eliminating duplicate copies of same data to save storage space and network bandwidth. A private cloud is responsible for duplicate detection and a public cloud manages the storage. Compared with the previous data deduplication systems, the system has two advantages:1)It can be used to confidentially share data with users by specifying access policies rather than sharing decryption keys. 2) It achieves the better security for data confidentiality compared to existing systems. Aprocedure is implementedwhere ciphertext over one access policy is modified into ciphertexts of the same plaintext but under other access policies without revealing the underlying plaintext.

Keywords:--

Cloud, Deduplication, ABE, Access Policies

Optimizing the Cloud Performance by Dynamic Workload Allocation

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Abstract:--

Cloud computing technology that uses the internet and focal remote servers to keep up information and applications. Resources allocation is to dispense the resources based on infrastructure as a service. Cloud computing offers dynamic provisioning and thus can distribute machines to store data. Need of resources are essentially expanding step by step. There is still absence of apparatuses that empower designers to analyse different resource allocation techniques in IaaS with respect to the two servers and client workloads. Cloud computing technology takes into consideration considerably more proficient registering by centralization storage, memory use and CPU clock cycle. A workload allocation algorithm, named max-min-cloud, is conceived to optimize the execution of the cloud service

Keyterms:--

Cloud computing, dynamic provisioning, optimize.

Decision Support System for Finding Fetal Heart Images Using Image Processing

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Abstract:--

Congenital heart defects(CHD) are broadly in charge of over 10% of neonatal mortality in India.The target of this work portray the use of few procedures for example image enhancement, speckle noise removal, morphology and edge identification to depict the formation of 4 chamber heart from clinical ultrasound imaging. In this paper we are going to examine the fetal 4-chambered heart within 4 months and classify the normal and abnormal, indeed cannot be identified by expertise so early, using image processing. To classify we use fetal echocardiogram images and SVM algorithm.

Keywords –

Congenital heart defects, Fetal echocardiogram, Image enhancement, Speckle noise removal, Ultrasound imaging

A study on causes and prevention of building cracks in concrete structures

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Abstract:--

Cracks in the building is the most common problem that occur in any type of concrete structure such as beams, column , etc... So, it is important to understand the cause and the measures to be taken for prevention. Though breaks in concrete cannot be avoided altogether yet they can be controlled by utilizing sufficient material and system of construction and considering outline criteria. But due to some faulty steps taken during construction or due to some unavoidable reasons different cracks starts to appear on various structural and non- structural parts of the working with proper way of time. There are cracks which need to be identified at appropriate time, so proper care of such cracks can be taken . This data gives different causes, prevention of building cracks and treatment strategies.

Ragi Threshing and Winnowing Machine

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Abstract:--
Ragi (finger millet) is an important cereal and fodder crop which is extensively cultivated in southern Asian countries like India, Malaysia and Nepal and is known for its high drought tolerance and nutritional properties.In present times with the changing environment and booming population, there is an increased demand of agricultural products. Growing of healthy crops is aided by science and green revolution, but, post processing of harvested ragi is a real challenge.Post processing of ragi done manually is very time consuming and inefficient, and employing of present heavy machines and making it accessible is also not possible due to various reasons.Thus, there is a requirement of cheap, affordable, easy to maintain and economical ragi processing machine which is designed and aimed specifically towards farmers with medium to small holdings. Controlling the cost will result in buying of the machine, rather than renting it, which has its own drawbacks.

A Review Paper on Content Based Image Retrieval Techniques

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Abstract:--

Content based image retrieval (CBIR) is a technique used for retrieving similar images from the large collection of image database. CBIR basically responsible for extracting features of images. A 'feature' means anything that is localized, meaningful and detectable. Almost all the CBIR techniques start from the query by example i.e. one image. The system first extracts the feature of the query image, searches the database for images with similar features, and exhibits relevant images to the user in order of similarity to the query. In this, content of image are nothing but the features of image like color, texture and shape etc. This paper presents review of different CBIR techniques which are helpful for finding relevant images for the query image..

Keywords:

Content Based Image Retrieval; Text Based Image Retrieval; Feature Extraction

Real-Time Object Detection and Recognition for Blind People Using Android Application

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Abstract:--
In day to day life there are many technological improvements in the field of science are being developed but in India, these advancements are not utilized or not been adopted well as other countries. In our paper, we are going to improve the old existing feature of recognition and detection of objects. There are many advancements has been done in the pas1t decade, but it's not successfully implemented. In our paper, we are developing an android application for object detection and recognition including a brand new feature medical assistance which helps the blind people to overcome the challenges in day to day life. In this paper, we are going to include 3 main features of object detection, traffic simulation, and medical assistance. Object detection includes detecting the static objects by using OpenCV and tensor flow library function, traffic simulation includes helping the blind person to know when to cross the road and medical assistance to help them to overcome the challenges faced by them. There are many advancements going on around us and this is our small approach to help the people with technology.

Retrofitting of electric drive train in Internal Combustion Engine Bike

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Abstract:--

The major disadvantage we are facing in modern electric motorbikes is that the charge in the battery which gives the supply for motor gets exhausted after certain duration of time. But the biggest threat is that when the motorbikes loses its full charge while driving in an area where the current could not be taken easily or there is no sort of current in that area then one cannot be able to reach the destination. Hence to resolve this minute, but pressing issue, the dynamos are used. The main objective of this paper is to power up the electric motorbikes with dynamos.Dynamo is a device which converts mechanical energy (rotational) into electrical energy. Hence by using this feature of the dynamo the problem can be solved. The description of this technique is that by placing one dynamo in each wheel so that each dynamo will produce a charge through the rotary motion given by the wheels of the Motorbikes and these charges is stored in a separate battery and that can be used for the emergency purpose and this process is cyclic. When Motorbikes loses its charge while running on the charge produced by the dynamo, the dynamo will not stops its work, it again produce a charge so that one can go for a longer distance and practically limitless unless there is any technical glitch.

Keywords –

Dynamos, Electric charge, Battery, PI Controller, Gear system

Wireless Sensor Network for Situation Awareness in Coal Mining

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Abstract:--

Wireless Sensor Networks (WSNs) are the networks with many distributed sensors which have limited processing capability with wireless connectivity. The data from sensor network helps to monitor the environmental parameters. WSNs has been utilized in many fields such as coal mine safety monitoring, agriculture management, and also in vehicle monitoring. In this paper, sensor data collection using ARM 7 microcontroller and Zigbee is studied. The study is mainly to monitor the parameters in mining environment.

Index Terms :

Wireless Sensor Network, Microcontroller, coal mine, Zigbee.

Experimental investigation on strength of concrete with partial replacement of fine and coarse aggregates with Iron ore tailings (IOT) and Rubber crumbs.

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Abstract:--

Concrete is a composite material composed of cement, fine aggregates, coarse aggregates and water. Now a day's construction cost is very high with conventional material due to unavailability of natural materials. This problem can be solved by total replacement of concrete with different material which is not convenient in terms of required properties. Due to this limitation of unavailability of material which plays the vital role of concrete we have only choice of partial replacement of concrete ingredients by waste material. In this project, an attempt is made to find the variation in strength properties of concrete on partial replacement of fine aggregate and coarse aggregate by iron ore tailing (IOT)and rubber crumbs respectively. Experiments were conducted to determine the suitability of rubber crumbs and IOT as coarse aggregates and fine aggregates respectively for concrete. Compression, Split tensile and Flexure test were carried out for different percentage of rubber crumbs and IOT for 3%, 5%, 6%, 9%, 10%, 20% and 5%, 10%, 12%, 20%, 24%, 30%, 36% respectively. The results are convenient up to 50% usage of Rubber Crumbs and IOT.

Keywords:

Iron ore tailing, Rubber crumbs, compression, split tensile and flexure strength

Enhanced E-commerce application security Using Cryptography and Biometric

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Abstract:--

E-commerce in today's world is playing an inevitable role. As much as technology makes things easier for us, it makes ourselves open to online attacks. Say for a banking transaction, all we have to do is login to our account and do the transaction. Currently, financial sites use static passwords, which are easier for customers to use. These can also potentially put the user's account into risk. Given enough time and number of attempts, an attacker can easily access login. Static passwords can be vulnerable to attacks such as shoulder-surfing, dictionary attacks and so on. By constantly altering the password, as is done with a one-time password, this risk can be greatly reduced. We propose a system with a different perspective of password security targeting online financial websites. E-commerce applications use OTP to provide security by changing the password every time, so OTP is preferred. For personal recognition biometric technique such as fingerprint or palm-vein scan etc can be used. Unlike other biometrics, fingerprint is unique. Noisy password is a strong alternative for static password. Hence, we are trying to incorporate a combination of all the three to provide a secure method to perform E-transaction in E-commerce applications.

Plant Leaf Disease Identification System for Android

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Abstract:--

Plants play a very significant role in the agricultural field. As India is an industrialized country and the position of a country in the world depends on its agricultural production. Due to climatic changes and environmental condition many of disease occur in plant. Sometimes human eye cannot identify the diseases, the plant leaf disease badly affect the worth of the production. To overcome this, an android application is developed which identifies the diseases on the plant leaves and provides prevention methods. Plant leaf disease identification is done based on the image captured using this android application. Detecting the plant leaf disease at the early stages helps the farmer to overcome it and it properly.

Keywords—

Android application, Loading Image, Segmentation, Feature Extraction

Performance Analysis of High Speed PCB Using S-Parameter

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Abstract:--

S parameter analysis plays a critical role in designing a system at high frequency >10GHz. It eases high speed PCB simulation and verification. At low frequency, a system design and verification can be accomplished efficiently with simple current, voltage analysis and design rule of thumb. At high frequencies the wavelength of the signal is comparable to the dimension of the conductor where the wave nature of the signal to be considered for the analysis. For the PCB containing DDRs, SERDES, high frequency differential signals and IC packages S parameter analysis is done by considering IBIS or SPICE model. S parameters consider IBIS and SPICE model as a black box and performs the analysis. Changes in the designs are performed to ensure impedance matching and thus to ensure signal integrity.

Key words:

DDR, SERDES, IBIS and SPICE model, HyperLynx, single ended and differential signal, VNA

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Modelling Macro Executer for Payloads in Remote Sensing Satellites with CCSDS Uplink Format

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Abstract:--

Remote Sensing Satellites are a class of satellites which are designed, launched, maintained and operated for the purpose of remote observation of Land-Mass. Its applications could range from cartography to resource mapping. Land observations by such satellites are carried out through several activities in multiple subsystems placed on-board as part of "Payload-chain". The subsystems of "Payload-chain" in-turn are operated by issuing commands from on-board automation and commanding system. The Land observing operations are request-based and potentially, newer sequence of operations happens in each session of such operation. Hence, automation for payload-chain operation involves re-programming by Ground-operators for each session. Automation for payload-chain is typically termed as "Payload Sequencer". Traditionally, a payload sequencer consists of sequence of operations pre-programmed in a fixed sequence which can be reprogrammed or edited, but not dynamically re-arranged. During a pre-determined Payload Session, any new operational requirements would have to be implemented by re-programming on-the-fly. This involved a large uplink data and required a large section of valuable session time. Also by the virtue of being a strictly fixed sequence, operational gaps due to subsystem's mandated delay, become inevitable. In order to mitigate such operational inconvenience and loss, a new payload sequencer for remote sensing satellites, "Macro Executor for Payload" (MEP) was designed and proposed. In this sequencer, a strategy involving clustering, parallel sequencing of multiple clusters, dynamic modification and master session sequence control are proposed. This sequencer could nullify the operational problem by being able to perform small sets of operation in parallel. This design proposal gives the mission team, a flexibility to have various combinations of payload sessions in configurable datasets, on-board. These datasets in combination with the programmed Macros cover the Payload Session requirements, with minimal command information uplink. There is also a redundant system which monitors the main system which also gets same informations from ground station as the main system only when the main system crashes the redundant system takes over operations that were being performed by the main system, Hence providing uninterrupted execution. Since MEP is a generic proposal, it is totally independent of the Payloads, and thus it can be used for operating any remote sensing mission, subject to the resource constraints of the embedded system. Thus, MEP design offers reusability and re-configurability using a large dataset. This MEP feature was demonstrated in Resourcesat-2A Mission.

Keywords— Automation, Datasets, remote sensing, spacecraft, embedded system, sequencing

Experimental investigation on the properties of pervious concrete

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Abstract:--

Pervious concrete also called porous concrete, permeable concrete or no fines concrete is a special type of concrete which is made of cement, coarse aggregates, water and with little or no fine aggregates for high porosity. Pervious concrete allows water from precipitation and other sources to percolate directly through it, thereby reducing the runoff and recharges groundwater. Pervious concrete has open pore structure and hence used in low loading parking areas, areas with light traffic, residential streets, pedestrian walkways and greenhouses etc. It has a significant application in sustainable construction to protect water resources. The objective of this project is to increase the mechanical properties of pervious concrete by the addition of Polypropylene fibers. Aggregates of 16mm and 20mm sizes were used in order to alter the strength and permeability of the concrete. Along with the basic tests, compression test, split tensile test, void ratio and permeability tests were conducted for four different mixes of concrete i.e., i) 16mm Coarse aggregates, cement and water ii) 20mm Coarse aggregates, cement and water iii) 16mm Coarse aggregates, cement, water and Polypropylene fibers iv) 20mm Coarse aggregates, cement, water and Polypropylene fibers. Each mix of concrete were tested for 7 days and 28 days of curing. The obtained results were compared to distinguish the mechanical properties of the pervious concrete for different mixes.

Keywords:

Pervious Concrete, Sustainable Construction, Polypropylene Fibres, Void Ratio, Permeability Test

Development and Fabrication of Multipurpose Power Tiller Attachment for Horticulture

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Abstract:--

Horticulture is a science and art of growing plants, vegetables and flowers. Due to increase in the population, the demand for the horticultural products produced has also increased. Due to migration from village to cities, getting labours to work at field is varying unlikely and at the same time not much of the technology advancement is present in farming. To overcome this challenges, this project deals with development of a multipurpose attachment using which a farmer can spray pesticides, cut down weeds and transport fruits, fertilizers and farming equipment. Here, an existing power tiller is used to power the designed trailer. By using belt drives, power tiller powers the pump which spray pesticides to plants while weeder cut down the weed and helps in mulching while carrying the tank filled with pesticides along with it. This attachment reduces the man power requirement.

Application Based On Electricity Smartmeter

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Abstract:--

A smartmeter is an electronic gadget that records utilization of electric vitality in interims of a hour or less and imparts that data in any event every day back to the utility for checking and charging. Smartmeters empower two-path correspondence between the meter and the focal framework. Not at all like home vitality screens, savvy meters can assemble information for remote detailing. Such a advanced metering infrastructure (AMI) varies from conventional automatic meter reading (AMR) in that it empowers two-route correspondences with the meter. Correspondences from the meter to the system should be possible by means of settled wired associations or by means of remote. In utilizing remote, one can settle on cell interchanges, Wi-Fi. Meter is associated with the web and information read from the meter is send to the server and client can get data about the utilization of the power from the versatile application or web-based interface, this framework can be utilized by power organization for getting the client utilization for charging with no prerequisite of worker to peruse meter information way to entryway. Client can get data about the utilization without going themselves to peruse information from the meter, the chart will be produced for their week by week and month to month utilization.

Keywords—

Smartmeter, AMR, AMI

Effect of Corrosion, Microhardness and Wear on Aluminium 2014 Coated with Inconel 718 using HVOF and Plasma Spray Coating Processes

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Abstract:--

The majority of engineering components currently being utilized potentially degrade or catastrophically fail in service due to such a phenomenon as wear, corrosion and fatigue. The thermal spraying process is one of the most successful of all the advanced coating techniques because of the wide range of coating materials and substrates to which it can be applied. Thermally sprayed coatings are used to protect components from wear and corrosion and improve the surface quality.

In this work, an attempt has been made to develop a ceramic coating of Inconel 718 with coating thicknesses of 100μm is deposited on Aluminium 2014(AA2014) alloy substrate using two different thermal spray techniques, HVOF (High Velocity Oxy-fuel) and Atmospheric Plasma spray coating technique. The coating samples were subjected to dry wear test which was performed using Pin-on-Disc method by varying load of 2kg, 4kg and 6kg and for two different speed range of 350 rpm and 700 rpm with track diameter 55mm and 27mm respectively. The coating samples were also subjected to corrosion test (Sea water salt spray test) for 5 cycles. The hardness of the uncoated and coated specimens was determined using Vickers microhardness test technique.

Coin Insert Mobile Charger

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Abstract:--

The smart coin based mobile charging system is a boon during emergency cases like low battery power and switched off condition. This project is based on Arduino MEGA microcontroller which controls the entire system including provision of password-based security for the mobile phones, once coin is inserted in the slot. The coin-based mobile battery charger can beused in public places to provide charging facility. The user has to plug the mobile phone into one of the adapters and insert a coin, and then the mobile begins charging.A countdown timer monitors the amount of charge to be provided for the stipulated time interval. It is possible to continue charging the mobile by inserting more coins. The future scope expanded to include different charging mechanisms including the use of solar power in case of main line power failure.

Keywords

Mobile charger, Coin insert, Coin insertion machine, Arduino mega.

Strain-Hardening Effects during Plastic Buckling Of Axially Compressed Aluminium Tubes

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Abstract:--

The paper investigates the effects of strain-hardening in aluminium (6063) circular tubes undergoing plastic buckling due to axial compression under quasi static and dynamic loads.Experimentation includes the study of change in modes of deformation behaviour and buckling for sets of annealed and as received tubes. Systematic studies were conducted to determine the effects of strain-hardening and strain rate. Quasi static tests were conducted on as received (VHN-75) and annealed (VHN-35) tubes to characterize the deformation pattern and load deflection behaviour. On a set of annealed tubes interrupted loading tests were conducted on intermittently annealed specimens to observe the effects of strain hardening. All the quasi static test cases have been repeated under dynamic loading conditions for different velocity ranges. Numerical simulations using finite elements analysis have been carried out for quasi-static and dynamic conditions and compared with the experimental results.

Experimental Study on Stabilization of Black Cotton Soil Using Waste Plastic Material

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Abstract:--

Infrastructure is a major sector that propels over all development of the Indian economy. For good foundation and pavement soil plays an important role. Expansive soil like black cotton soil always create problems in foundation. Soil stabilization is a process which improves the properties of the clay soil. A study is made to increase the properties of clay soil by replacing some amount of soil by waste plastic material. Plastic wastes have become one of the major problems of the world, due to which we are facing environmental problems. This technique of soil stabilization can be effectively used to meet the challenges of the society, to reduce the quantity of waste and to produce usefull material from non-usefull material. The basic propeties of the soil such as liquid limit, plastic limit, shrinkage limit, maximum dry density(MDD), california bearing ratio(CBR), unconfined compressive(UCC) strength were determined. The replacement of the soil by waste plastic was carried out with 1%,2%,3% and 4% and change in the properties of soil was studied.

Keywords:

Soil stabilization, Black cotton soil, CBR, Unconfined compressive strength, plastic waste, dry density.

Authentication of credit card user Using face recognition for online Transaction

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Abstract:--

With growing use of credit card for online transaction, a more safe and secure method for authentication and verification of the user is required. The credit card information is the critical knowledge and interest various hackers. To avoid this, authentication of the credit card user can be done using face detection and recognition techniques. Using face recognition for authentication the user can make innocuous transaction and prevent information theft. With banking sector being the continuous target of the hackers for information theft, this method provides some level of refuge and security to the user. The face detection technique is comparatively more secure as compared to password it is not possible to gain access the face of a person for authentication; on the other hand, passwords and pins are easily accessible.

Keyword:

Authentication, face recognition, face detection

Smart Salvage

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Abstract:--

Human safety in India is a big concern which has been a most important topic regarding people safety. In the current scenario, every person are worried about when they will drive fast even at odd hours without thinking about their safety. Providing safety to people in the current world scenario is a critical issue. Now a day, accidents have been increased by negligence of drivers and riders. Hence hospital assistance system for safety has become the most important preference among many organizations. Hence this proposed project is designed to provide security for all people by sending message to nearby ambulance service and to the police. The application also sends location of the end user and also alerts to the emergency contacts. So many IT companies are looking forward to solve the security issue and thus require a framework that will work efficiently and reduce the number of accident. Hence this proposed project is designed to provide security for all peoples, by sending message to nearby ambulance service and to the police. The application also sends location of the end user and also alerts to the emergency contacts.

Keywords:

GPS,Voice Recognition, Ambulance, Police Station, Fire Services, Emergency Contacts.

Homomorphic Encrypted MongoDB for Users Data Security

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Abstract:--

Database is used for storage of information in Software Applications. Normally, traditional RDBMS are used for storage purposes but with applications generating enormous amount of data, RDBMS is no longer efficient because RDBMS doesn't support quick data access and computations as it do not support processing of data in distributed manner. To overcome this problem, NoSQL based MongoDB is emerged which is document oriented database, it stores the data in the form of collections rather than tables therefore it supports quick data access and computations in distributed way and it provides flexibility by not enforcing the particular schema to be followed throughout. But very often MongoDB fails to provide security to the user data, which is very important these days. In this paper, security for users data is provided by using additive homomorphic asymmetric cryptosystem which encrypts the users data in MongoDB(CryptMDB)and achieve strong user's data privacy protection. This also supports the database operations over the encrypted data.

Index Terms—

Database, RDBMS, NoSQL, MongoDB, Homomorphic cryptosystem, CryptMDB.

Smart Click Shopping

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Abstract:--

The Smart Click app is a Mobile Computing Based application to solve the problems based on real-life scenarios. The application allows the customers to search the shopping mall based on their preferences like location, categories and budget. The application guides the location of the mall to the customers using GPS. The application also solves the problem where the customer stands in queue for billing in supermarket. Using this application, customers can complete the entire checkout process on their phone. The application allows the customer to scan items using mobile phone's camera as barcode scanner as they go through the store. Every item that is scanned gets added to the customer's virtual cart and everything is totaled up when they are done with shopping and a digital receipt is generated, hence they can pay and move in just few clicks. A recommendation system is introduced for the customer using Wi-Fi object localization. Using Wi-Fi object localization allows the customers to search for their required items in a store and also navigates the customer to their requested item location. Using Wi-Fi object localization, system can spot the location of the customer inside the store and based on that nearby product alert is send to the customer's phone. The application comes with an added feature of ratings and reviews, using which customers can suggest the store or mall to other customers.

Keywords:--

GPS, Barcode scanner, Wi-Fi object localization

Bacillus Concrete

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Abstract:--

The prerequisites of high strength for structures presented to cruel condition, for example, ocean bottom, seaward, burrows, thruways, spans, sewage pipes and structures for strong, fluid squanders containing dangerous chemicals and radioactive components may not be accomplished utilizing the present customary Portland cement. This exploration gives data about the aims for expanding the quality and the aggregate strength of the concrete utilized as a part of the present day by presenting microbes. These miniaturized scale life forms are soil bacterium. These microscopic organisms shows a wonder referred to as bio-calcification as a piece of their metabolic movement. Bio-calcification is a procedure through which the miniaturized scale creature remotely secretes calcium ions, which within the sight of a carbonate particle frames CaCO3 which tops off the voids in the solid surface therefore making it more minimized. This enhances the quality in concrete because of development of the filler material inside the pores of the concrete mixer.

Design and Fabrication of Aregenerative Braking System

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Abstract:--

In the present world scenario, there is a need for a method or technology to save the wasted energy. In case of automobiles, energy conservation can be done by using a regenerative braking system (RBS).When driving an automobile, enormous amount of kinetic energy is wasted when brakes are appilied.The main aim was to develop a working model that recovers the kinetic energy which is normally lost during braking and to reuse it.

This paper discusses the method of designing and fabricating a system which converts the kinetic energy into electrical energy using four bar links, two DC motors, two rotors and a braking drum. The energy generated can be redirected to be stored in a battery or can be used to power other electrical parts in an automobile. Experimental tests conducted on the fabricated model revealed that a minimum of 25 volts/minute can be generated every time when the brakes are applied.

Performance and Emission Analysis of CI Engine using Honge and Waste Plastic based Biofuel

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Abstract:--

Energy is an important input in all sectors of a country's economy. Till date the world in general and India in particular mainly depend on petroleum products as energy source. Alternative fuels are the candidate fuels of the present and the future. More and more vehicles are switching over to alternative fuels worldwide, indicates a sure sign of their need. Therefore, considerable attention is focused on the development of alternative fuel sources. These vigorous research initiatives are aimed at developing alternative renewable and potentially carbon neutral solid, liquid and gaseous biofuels as alternative energy resources.

The present work is mainly focused on honge oil and waste plastic oil. In the first phase of the study, different properties of test fuels are evaluated using ASTM test standards and compared with that of conventional diesel oil. Biodiesel is made by the most viable and commonly used transesterification method. In the second phase of the study, the effect of injection pressure on the performance and emission characteristics for various blends of biodiesel at different injection pressures of 180 bar, 200 bar, 220 bar are studied. The experimental investigations reveal that the better performance and emission characteristics among the biodiesel blends are obtained at injection pressure of 200 bar.

Key words:

Energy, alternative fuel, honge oil, plastic oil, injection pressure

Rain Sensing Smart Wiper

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Abstract:--

Car wipers are manual systems that work on the principle of manual switching. An automatic wiper system with conductive rain sensor incorporating ATMEGA328 microcontroller to drive the servo motor is used. When rain falls, circuit gets completed and sends a signal to the microcontroller. The microcontroller processes this data and drives a motor IC to perform required action. The motor driver IC drives a servomotor to simulate the car wiper.The present project work brings forward this system to automate the wiper system having no need for manual intervention. For this purpose we used conductive rain sensor along with ATMEGA328 microcontroller to drive the servo motor. The automatic wiper system uses rain sensor to detect rain and then the signal is processed by microcontroller to take the desired action.

Fabrication of Multipurpose Agricultural Equipment

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Abstract:--

Cultivation of any crop involves various steps like seed selection, field preparation, fertilizing, sowing, irrigation, germination, thinning and filling, weed removal. Fabrication of a multipurpose agricultural equipment is carried out which implements furrow opening, sowing, leveling and furrow closing processes. The equipment has the capability of delivering the seeds with uniform depth in the furrow and uniform spacing between the seeds. For sowing of different variety of seeds, a seed metering disc was designed which is interchangeable. The multipurpose agricultural equipment is very simple to use, the various adjustments are made with ease. Testing of equipment is carried out for seeds of maize and nuts. Two parallel furrow openings of 3 inch is achieved with fabricated equipment.

Synthesis and Testing of Polymer Matrix Composite Material

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Abstract:--

Polymer Matrix composites find wide applications in aerospace industry. In the present work, experiments were carried out on polymer matrix composites with polyester resin, natural rubber as matrix and E-glass fiber as reinforcement.Composite test specimens as per ASTM standards were prepared with varying fiber densities by hand layup process and by varying types of matrix through hand layup process.E-Glass fibers with high strength to weight ratio, natural rubber with excellent hyper-elastic characteristics are considered for study. Tensile, Bending and Fastener test has been carried out to determine the amount of load that test specimens can withstand. In all the tests symmetrical density specimens has good strength.

Propulsion of a Projectile Using Lorentz Force

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Abstract:--

An electromagnetic railgun is used to launch a projectile using electrical energy instead of conventional chemical propellants. In conventional railguns, the electric current through the rails has to be large to achieve a sufficient magnetic field in order to produce a high enough Lorentz force to accelerate the projectile. A 32 kJ, super capacitor bank operating at 12 V powered the rail-projectile circuitry. The magnetic field is produced by a separate coil arrangement which is powered by an independent circuitry of 300V DC. In this setup, the two rails have a cross-section 12 mm x 3 mm at 240 mm length, the projectile has cross-section of 3 mm x 16.5 mm with 12mm active length which enabled to accelerate the 5.3 g projectile to velocity above 1 m/s with current limited to around 14A to avoid extreme arc ablation of rails.

File Transfer System with Privacy Preservng Data Encryption Strategy

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Abstract:--

Privacy has become a significant issue because of the radically growing uses of big data in cloud computing. The advantage of employing these evolving technologies is that it has enhanced or reformed service models and enhanced application performances in various viewpoints. However, the extraordinarily growing data sizes has also ensued in many challenges. We focus on secrecy and put forward a different data encryption approach, which is called Dynamic Data Encryption Strategy (D2ES). Our suggested method aims to selectively encrypt data and use privacy grouping methods under timing restraints. This approach is intended to get the most out of the privacy security scope by using a discerning encryption strategy within the necessary execution time

Keywords:-

privacy; encryption strategy; dynamic data encryption strategy(D2ES); selective encryption;

Inkblot Password Security to Avoid Bruteforce and Phishing Attack

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Abstract:--

Many security Primitives are based on text based passwords which can be hacked using brute force attack and dictionary attack. To overcome problem we present a new security primitive based on graphical image authentication system using inkblot images. This type of system avoids phishing attack. Since the user can able to understand the inkblot image which he saw during password setting is differ while login process he can able to understand this is a phishing site. To improve the system we implemented security measure on banking application.

Water Quality Analysis and Environmental Imapct Studies on Varthur Lake

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Abstract:--

The pace of urbanization is increasing globally putting more pressure on surface and ground water quality. In addition to discharge of urban and industrial wastewater urban areas add to poor water quality in a number of ways. The study was conducted to assess the surface and ground water quality values of varthur lake which is a major tank in south taluk. Samples were collected in clean and sterilized plastic bottles of 3 litre capacity.

The samples were collected to examine the water quality in the month of February 2018 of Varthur lake and brought to the laboratory for physic-chemical parameters analysis. Selected Parameters were analysed by standard methods of CENTRAL POLLUTION CONTROL BOARD OF INDIA. The surface and ground water quality of Varthur Lake has exaggerated due by the consequent changes and urbanization which indicated the physico-chemical concentrations of lakes found in high levels. Despite of some conservation efforts made by the authorities this lake is threatening immeasurably. Continuous monitoring of lakes should be enacted properly as from the origin point at the end to overcome these situations

Lifetime Membership Database Management System

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Abstract:--

To create the database management system for an organization via web application which solves the problems that has been facing while managing data in excel sheet or some other file based systems. The web application use the most famous and flexible MVC architecture to make the components loosely coupled and to generate the dynamic content. MVC makes the application flexible, scalable, updatable and maintainable.

Project Title: Recycled Compressed Air Engine

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Abstract:--

I C Engine running on pure air is good solution on for environment pollution. With modifications in cam shaft, a 4- stroke S I engine is converted into a 2- stroke engine. 2- stroke engine is operated with compressed air of pressure ranging from 8 bar to 10 bar. A belt- pulley attachment is connected to the wheel of the engine. A single stage reciprocating air compressor is driven with power drawn from wheel. Compressed air generated is sent back to engine for operation. This work presents the modification and fabrication of a Recycled compressed air engine.

Development of Regendyne Maglev Windmill for Power Generation

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Abstract:--

In the recent years, the demand for electricity is increasing at frightening rate and the requirement for power is running ahead of supply. The current methods are not effective to cope up with the current increase in demand. The lack of energy, has forced to think & develop the power generation by renewable sources (mainly wind power).

The main objective of this project is to implement an alternate configuration of a wind turbine for power generation purposes. The floating blades spin with little resistance, and the power output is increased. They also can spin with a minimum wind speed of about 1 to 2 m/s. This provides efficient frictionless Power Generation with less maintenance, compared to other conventional methods of power generation through wind resources.

In this project prototype is developed which shows wind power generation by elimination of gear system which are present in conventional wind turbines. Using magnetic levitation frictional losses will be avoided and power generated will be improved. Comparing with conventional type vertical axis wind turbine is more efficient that will capture the wind in all directions. By using permanent magnet (Neodymium) repulsion effect replaces the bearings to reduce the frictional losses and produce power more than conventional type with cost effective.

Keywords:

Wind power, Maglev, power generation, blades

A Survey on Cyber Attacks and Cyber Security Techniques

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Abstract:--

this survey paper gives the overview of the cyber attacks and cyber security techniques. Cyber attacks are rapidly increasing with the growing technology. The increase in the use of network resources is followed by a rising volume of security problems. With the ever-increasing dependence on digital services for day-to-day activities, safeguarding the vital and personal information from maliciously being disrupted, modified or misused is indispensable. Monitoring network activity is an essential step for understanding these threats and to build better protections. Cyber security plays the vital role in today's world; it is used for detecting, defending against threats and securing the resources, data and the network from the cyber criminals.

Sensitive Data Filtering in Online Social Media

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Abstract:--

Online Social Networking sites (OSNs) helps the users around the globe to connect easily. Various online social sites are available like Facebook, Google Plus etc. which has brought the mankind closer. In OSN, a user creates an account on a social site after which that particular user is able to perform various actions like adding friends, sharing videos and images. Some empty space or area is delivered by the OSN to post the status such type of an empty area is called a Wall. But there are some instances when people post offensive messages on a particular user's wall which may cause a serious problem to user's reputation. Information Filtering (IF) technique is applied to evade such type of grave problem. Information filtering can be possibly used on formless data in comparison to database application in which data of ordered manner is required. Numerous types of Information Filtering methods which are existing are Content-based filtering method, Policybased filtering method, etc. Filtering of the post is applied by both of these techniques.

Keywords-

Online Social Networking, Information Filtering, Content-based Filtering, Policy-based Filtering

In-process Cyber-Attack Detection Using Machine Learning

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Abstract:--

A cyber-attack detective system issues alertswhen an intruder tries to perform unsafe activities on a software application. An application-sceptic cyber-attack detective system is created which responds to frequentsoftware vulnerabilities that provide alerts.

This paper is about building a cyber-attack detective system and applying it to web-based applications by program transformationand machine learning techniques. It specifically determines whether it is possible to identify cyber-attacks with lightweight structures resulting from a call graph and call tree by machine learning techniques. These are trained with features taken out from a trace of application implementation. The detection system adapts efficiently and securely to prevent cyber-attacks which do not need application developers to own in-depth expertise in cyber security tactics, techniques, and procedures which can be done using machine learning.

Keywords:--

cyber security; machine learning; call graph; call tree;

KIWI: The Artificial Intelligent Robot

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Abstract:--

Artificial intelligence (AI) is a fast-growing and richly developing field. Artificial intelligence means intelligent behaviour of machine, rather than the natural intelligence of humans. Its aim is to build, generate and develop computers that perform acts that are normally done by people.AI can be categorized as two strong AI and weak AI. The AI robot is one that controls the things which in nature should will be modified and controlled by the humans manually. That is, it decides the operation of the machines automatically by analysing the environment. It connects to us, the machines and with the rest of the world. It has various functionalities. KIWI the AI robot is an implementation of narrow artificial intelligence which is designed to perform a specific operation with intelligence. The robot continuously monitors the weather parameters and controls the ventilation system of the indoor area. Raspberry Pi3 is the central unit and is interfaced with robot to retrieve the values and upload it to the database.This database is made available to users using PHP/HTML/CSS implementations and can be accessed from anywhere in the local area network in the web browser.The robot is Bluetooth enabled and can be controlled using an android application that is built for this robot.

Keywords—

Artificial intelligence, Raspberry Pi

Cyber Law and its Advantages in Indian IT

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Abstract:--

"Cyber law" this word includes all the cases, laws and legal necessities that affect individuals and establishments that provide entry to the cyber world, govern the access to cyberspace, create the hardware and software which allow people to access cyberspace or use their own devices to go "connected" and enter cyberspace. To keep it simple, cyber-crime is illegal act wherein the computer is a tool or can be a target or can be both. Cyber-crimes can involve immoral doings that are traditional in nature, such as falsification, theft, mischief, defamation and fraud, all of which are subject to the IPC - Indian Penal Code sections. This manipulation of computers has also given rise to a range of new age misconducts that are addressed by the Information Technology Act, 2000. Certain mechanisms are required to control the crimes that are caused by the achievement or innovations in any field by human actions. Guarantee to the users, permission to the legal prosecution authorities and dissuasion to law breakers must be provided by the legal provisions. Now a days crimes are limitless to the group of people, space or time. Cyber space gives rises to all types of ethical, political, immoral abuses. This world is becoming a new way to express criminal affinities. In 90's not more than a lakh people around the globe were able to access Internet. But now about 4.021 billion are surfing the net worldwide. To many IT professionals cyber-crime was not a interesting phenomenon since they were deficient of awareness..

Android-based College Fees Payment Application

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Abstract:--

The primary focus of this paper is to propose a mobile solution for college fee's payment system. Students of the colleges have been paying all their fees such as tuition fees, hostel fees, mess fees and other college-relevant fees manually while waiting in the long queues which waste not only student's precious time but also the college management's time. Due to this, colleges have to maintain all the information regarding the fees manually into their databases. This paper proposes to build an android application that will give the students a freedom to pay their fees from anywhere, anytime, 24x7. This android application serves as a more reliable and effective means of paying college fees and removing all forms of delay and stress that is involved in the manual system of college fees processing.

Key words:

Android application, Android Studio, Android SDK, Firebase, JSON.

A 12nm FinFET Level Shifter for near threshold circuits

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Abstract:--

wer has turned into the essential plan imperative for chip designers today. While moore's law perpetuate to provide additional transistors, power related constraints have started to preclude those devices from being utilized. These days, low power designs, particularly multi-voltage designs turns into a well known and proficient approach to reduce both dynamic power and static power consumption. A key parameter in designing of effective multiple supply circuits is limiting the cost of the level transformation between diverse voltage domains while keeping up the overall robustness of the design. To such a reason, level shifter (LS) circuits can be used. In order to achieve reduction in power consumption, a proposed level shifter topology has been used in this paper which uses a low contention between PMOS and NMOS transistor due to which dynamic energy consumption is reduces, speed is also increased due to the use of feedback loop and also due to the near threshold computing its energy efficiency is more. As 12nm technology node delivers better density and a performance boost over Global Foundries' current generation 14nm FinFET, which satisfies the processing needs of the most demanding computeintensive applications from artificial intelligence and virtual reality to high-end smart-phones and networking infrastructure, the proposed level shifter has been scaled down to 12nm technology node which is capable of converting near-threshold voltage signal to above threshold voltage signal(i.e. from 250mV to 500mV) with 284.1229nW of power dissipation.

Keywords: --

FinFET's, level shifter, low power, near threshold

Iot Based Automatic Irrigator

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Abstract:--

Automatic systems are more preferred than manual system in today's world. This paper propounds a design for field watering system based on android application. It is an automatic control and monitoring of basic gardening appliances for healthy growth of plants. The system uses Android application to control and monitor the appliances and Wi-Fi technology as a communication protocol to connect system components. Depending upon the moisture level of agricultural land and daylight intensity, the system can detect the appropriate time of water supply to the plants and trees in the crop field. The analog data received from the sensor are transmitted as digital signal via Wi-Fi, which will be given to our Android mobile phone. Nowadays, adopting an optimized automatic irrigator system has become a necessity due to the lack of the world water resource and time deficiencies.

Index Terms—

IOT (Internet of Things), Sensors, Irrigation, NODE MCU, Android.

Characterization Study of Aluminium2024/Aluminium Oxide/Silicon carbide Metal Matrix Composite

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Abstract:--

Metal matrix composite (MMC) has higher specific strength, which enables the usage for high temperature and wear resistance applications. Metal matrix composites are under serious consideration as potential candidate materials and it is mainly used in automotive and space applications. The aluminium matrix can be strengthened by reinforcing with hard particles like SiC, Al2O3and B4C etc. Metal Matrix Composites (MMC) are the advanced and new age materials that find application in sectors like automotive, aerospace, rail ways, defence etc.

In this project, aluminium 2024 alloy was chosen as one of constituent parts, which has good machineability, good strength, and high fatigue resistance comparable with other alloys. The Al 2024 find its applications widely in aircraft wings, pistons, cylinder heads etc.as they possess light weight characteristics. The most commonly used reinforcements are silicon carbide (SiC) and Aluminium Oxide (Al2O3). SiC reinforcement increases the tensile strength, and has lower thermal expansion.The Al2O3 reinforcement possesses good compressive strength, hardness, and wear resistance. The fabrication of aluminium 2024 with Aluminium Oxide (2% to 4%) and silicon carbide (2% to 4%) is carried out by stir casting process, which is a liquid state material fabrication and cost effective method. Then, the samples are tested for mechanical properties like tensile, hardness, impact and wear.

Key words:

Aluminium2024, Aluminium oxide, silicon carbide, stir casting, mechanical properties and wear.

Synthesis of Methanol from Atmospheric CO_2 Using CU-ZRO_2-ZNO Catalyst

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Abstract:--

CO_2 hydrogenation to methanol is a powerful alternative for non-renewable energy. This mitigates both global warming by CO_2 utilization and reduction in the usage of fossil fuels. Conversion of CO_2 to methanol is one of the top most research priorities all over the world. As the CO_2 sequestration process is expensive, there has been a quest for finding other alternative options. CO2 is absorbed by lime stone which is then extracted by using kipp's apparatus. The CO_2 obtained can be used for hydrogenation process to get methanol. The catalyst Cu-ZrO_2-ZnO was preferred over Cu-ZrO_2 because of its conversion rate and stability in the reaction during hydrogenation process. The % conversion of CO_2 to methanol was around 10-12% for chemical composition of the catalyst. Obtained methanol is an effective alternative fuel.

Trio Transmission in a Two Wheeler Bike

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Abstract:--

Most of the manual transmission two wheelers use a sequential gearbox in whichgears are changed by foot lever. Automatic transmission vehicles can automatically changegear ratios as the vehicle moves, freeing the driver from shifting gears manually but haveless efficiency compared to manual transmission vehicles. In the present study with the helpof microcontroller, the gear can be shifted automatically in a manual transmission systemby using a wheel speed sensor, two lead screw actuators. Based on the wheel speed the gear areshifted .The main objective of our project is to automate the gear transmission in a gearfeatured bike to ease the driving and also to maintain the efficiency of the bike and toinclude a separate mode of transmission i.e. hand operated switch gear. This mechanism isused in auto-clutch featured bike to smoothen the gear meshing and can be implemented inclutch featured bike. The aim is to have 3 transmission modes, combining all the three systems we can call it as a TRIO transmission system (manual gear shifting , automatic shifting , switch gear).

Keywords:

Trio transmission , lead screw, actuator, micro controller , wheel speed sensor.

Cloud Based CMIS with Offline Synchronization

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Abstract:--

Performing offline synchronization between different databases is the most challenging task. The lack of a standard interface to content management systems made it difficult to integrate content from multiple repositories into a single application such as a portal, CRM system, or office desktop. We overcome this problem by creating an abstract layer using CMIS .The synchronization takes place with the help of CouchDB replication protocol. CMIS is a vendor neutral, language independent specification for working with ECM systems. The main benefit of CMIS is that the developers do not have to learn a new API every time they encounter a new type of repository. PouchDB enables applications to store data locally while offline, then synchronize it with CouchDB and when the application is back online, keeping the user's data in sync no matter where they next login.

Keywords:

Content management interoperability services (CMIS), Enterprise content management (ECM), Application Programming Interface (API).

Intrusion Detection

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Abstract:--

The clients cannot depend on cloud's security infrastructure in public cloud computing environments. They can implement their own intervention diagnosis capabilities along with the cloud fabric and security infrastructure level for a public cloud. It targets on rapid elasticity and migration of cloud services from one cloud to another between public and private cloud to protect their virtual existence.

keywords:

Web application, Cloud Computing, Intrusion detection, Firewalls, Risk Management.

Home Security Using Raspberry PI

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Abstract:--

In today's rapidly moving world where almost everything is driven by technology, it has become the central and essential part of living. With increasing rate of crime, protecting our loved ones and our belongings has become important. Such situations can be solved by exploiting the latest functionalities that current technology has to offer i.e. IOT which provides seamless data communication, remote control ability makes it easier to automate the process of security. Automation of security can be achieved by designing an application on Raspberry Pi through various sensors such as motion sensor -PIR (Passive Infrared) sensors for detection of an intruder in the house, upon detection an alarm is raised and the owner of the house and law enforcement are notified.

Smart Library System with Enhanced Security Using Rfid Technology

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Abstract:--

Most of the library systems are using manual intervention for issue and return of the books. This process is very time consuming and requires lot of man power and labor cost. Hence we use RFID technology to overcome these disadvantages. Radio frequency identification (RFID) is a wireless non-contact technology that transmits data using radio waves from an RFID tag attached to an object by the reader for tracking and identifying objects. It is automatic identification technology. RFID system consists of two main components: RFID readers and passive RFID tags to store the information. It helps to automate the processes, allows identification of large number of tagged books, provides fast transaction flow and will make it easy to handle the activities like issue and return of books from library without much manual intervention. The use of RFID reduces the amount of time required to perform circulation operations and it also reduces staff stress. The information read from RFID tags are much faster than that from barcodes. RFID technology can also be used to search books in library. This system also includes cataloging (classifying and indexing materials), acquisitions (ordering, receiving, and invoicing materials), circulation (lending materials to users and receiving them back), serials (tracking journal, magazine and newspaper holdings). Using this proposed system it becomes very easy for the students to search books based on the respective semesters and other information and also updation of the book data after each issue and return of the books in the respective shelves will also become easy and also students can renew the book from whichever place they are and can extend the date of return using the android application. It provides enhanced security using android application to check the eligibility criteria of a student and also student cannot exist the library without making an issue process.

Keywords:
RFID(Radio Frequency Identification) , RFID readers , Passive RFID tags, Android.

Design and Development of Text Retrieval in Web Using Efficient Combined Tag Value Method

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Abstract:--

In World Wide Web, searching an information on the particular text or domain is based on the user's given query. Web generate the results in the format of structured and unstructured pages. Those page may contains relevant or irrelevant information based on the input. To find the relevant information on particular text using Efficient Combined Tag value (ECTV) method for data extraction and alignment. The web page text will be stored as table like structure either row or column wise. Each attribute finds the value in the record field or structured text stored in different domains. Identifying the tag value and data value using pairwise and comprehensive methods to achieve the efficiency of web page result. This paper describes the methods and techniques of data extraction alignment and proposes a new technique for document template matching.

Keywords :--

Document Retrieval, Data Extraction and Alignment, Text Retrieval, Tree Matching, Web Content Mining

Experimental Study on Partial and Complete Replacement of the Standard Aggregates Using Recycled Aggregates Obtained from Ready-mix Concrete Waste.

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Abstract:--

Recycled aggregate (RA) obtained from the crushing of the ready mix concrete waste can be used in the construction industry. Ready mix concrete waste is generated due to a result of poor workmanship, improper mix design, waste due to cleaning of equipments and various other reasons, which is dumped in the RMC plant or used as a landfill. Hence an attempt has been made to study the possibility of the reusing of the recycled aggregates (RA) in the place of the standard aggregates. The recycled aggregates (RA) are divided into two different types i.e. recycled fine aggregate (RFA) and the recycled coarse aggregate (RCA). The basic properties of the aggregates such as water absorption, specific gravity, sieve analysis, abrasion & impact resistance were considered. The replacement of the standard aggregates by the recycled aggregates (RA) was carried out in five stages of 20%, 40%, 60%, 80% & 100% replacement. To enhance the properties of the concrete GGBS and ECMAS HP890 (super plasticizer) was used. The workability of the fresh concrete and the compressive strength of the hardened concrete were studied. The preceding properties were tested for three different periods of curing of 7, 14, and 28 days. All these mixes were designed for M25 grade of concrete. A comparison made between the results of a laboratory investigation on various physical properties of the concrete with recycled aggregates (RA) and the concrete with standard aggregates found that the results are encouraging to use the recycled aggregates (RA) in the preparation of concrete.

Keywords:
Recycled aggregate (RA); Recycled coarse aggregate (RCA); Recycled fine aggregate (RFA); GGBS-Ground-granulated blast furnace slag; ECMAS HP890 (super plasticizer); Compressive strength.

Green Roofs for Energy Conservation and Sustainable Development

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Abstract:--

In recent years, increase in temperature has proven an evident for global warming. Deforestation has lead to destruction of greenery on earth. As forests, agricultural fields, and suburban and urban lands are replaced with impervious surfaces resulting from development, the necessity to recover green space is becoming increasingly critical to maintain environmental quality. Our mother nation India is becoming one of the most polluting nations in the world. In India especially in Bangalore, which was once called a green city is now called as a garbage city because of cutting down of trees which has lead to pollution in our cities. In order to reduce the pollution immediate remedies cannot be done such as demolishing ob buildings to construct eco friendly or sustainable buildings which lead to more emission of CO2 which is harmful for ozone layer. In order to overcome this issue green roofing is one of the trending techniques used in individual homes. Basically green roof technology is a passive cooling system that resists the heat penetrated due to solar radiation. In green roofs, solar radiation is balanced by sensible and latent heat fluxes from the plants and the soil surfaces and with conduction through the soil substrate. Green roofs also play an important role in reducing CO2 in atmosphere, used a medium for storm water runoff, vegetation and reducing the noise level in the building. This paper gives complete knowledge on how it is implemented and difference temperature variations.

Keywords:

CO2, temperature, storm water runoff, reduction in noise level

Evidence Identification from Web Browser and Forensic Analysis through Recoverable Data

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Abstract:--

Browsers are mainly intended to use the worldwide web. They can also be used for accessing information that is provided by the web servers in secured network. They are the most used application by majority of computer users to connect internet. Users carry out activities such as, glancing on the internet, copy the files, and use social media applications via web browser. Various crimes are committed on alpha numeric resources. This can be prevented from forensic investigation by examining the records of web browsers. Most of the crimes involved by entering the URL, access times, and browser type downloaded files, search words, such information must be included in the reports which helps to investigate and trace unethical activity. Also recovers the deleted information by storing it on separate temporary databases such history.db, web .db.

Key words:

Unethical activity, URL records, digital forensic, digital evidence, recovering information.

Design and Fabrication of Automatic Hand Brake Releasing System

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S Puneeth., Assistant Professor, Dept. of Mechanical Engineering, Vemana IT

Abstract:--

This project emphasizes on developing an automatic hand braking system. A hand brake of an automobile is a component which is operated more often during the service. The conventional hand brake consists of a ratchet lever locking system which is operated by hand lever. Automatic hand braking system reduces the risk factor for the driver. The electric circuit consists of control unit, stepper motor, lead screw and cable. With switching on ignition, command is sent to the control unit which actuates stepper motor and releases the hand brake. With switching off ignition, command is sent to the control unit which actuates stepper motor in the reverse direction and applies the hand brake.

Optimization of Cutting Forces in the Lathe Using Dynamometer

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Abstract:--

Machining operations plays a vital role in manufacturing industries. In the present work, an attempt has been made to investigate the effect of cutting parameter (cutting speed, feed rate and depth of cut) on cutting forces (feed force, shear force and cutting force) in finished turned bars of mild steel and aluminum. By varying the approach angle, rake angle and side clearance angle of the cutting tool and experiment were conducted to optimize the cutting forces to find the best suitable parameters for single point cutting tool. The suggested tools of cutting forces within the limits of the cutting parameters considered. The obtained results of machining tests performed at different cutting parameters shows that the best cutting angle with less forces and dynamometer can be used reliably to measure cutting forces.

Experimental Investigations on the Behavior of Mortar and Concrete with the Addition of Polymer Based Repair Materials

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Abstract:--

structures Concrete have been widely constructed on large scale in every country for infrastructural purpose but due to the aggressive atmospheric changes the structure may under go distress and need to be repaired to increase the durability of the structure.

To increase the mechanical and durability properties of the concrete a suitable repair materials has been selected for a specific repair. an effort to evaluate the mechanical properties of native concrete and the repair material is made .The durability of bond is analyzed by the compatibility between native concrete and repair materials has been studied and checked through finite element method .In the present study ,the mechanical properties such as compressive strength,split tensile strength and bond strength of the concrete, mortarand the repair materials i.e, styrene butadiene rubber (SBR) based polymer modified mortarand renderoc plug concrete mortar have been evaluated.

The results and mode of failure composite cylinder are compared with FEM analytical model.Thisresults directly reflects the compatibilityof repair material with the native concrete and provides a scope for further research work.

Keywords:

Repair, rehabilitation, slant shear, modular ratio.

Prevention of Theft, Accidents and providingInsurance using Cloud

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Abstract:--

As the existing system made up of the anti-lock braking system, airbags, electric windshield wiperand speed governing systems, inflatable seatbelt whichdoes not afford the adequate safety. Our main agenda isto design a product introducing the mobilecommunication into the embedded system with the helpof GPS tracking in order to prevent theft and accidents.Preventing accidents refers to activities designed toforesee and avoid accidents. Various sensors are togather the data and store in the cloud. The cloudplatform is been used to analyse the data which is takenfrom the vehicle and provide the status of the vehicle.Also, the claiming of insurance is a tedious process as itchecks the information from the report prepared by thepolice and estimate the status of damage. Therefore, thedata can be accessible to the user himself with the serviceCentre and to the insurance company.

Keywords:

ARM 7 controller, sensors, GPS, GSM

River Cleaning Surface Vehicle

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Abstract:--

The drifting waste threat of the Indian streams has been a wellspring of worry for just about 10 years as the waterways are suffocated and their stream is limited. Our water bodies have transformed into a pool of poison and has prompted sick impacts on the nature of water and amphibian life because of the scope of plastic waste and different flotsam and jetsam heap up . Declining water quality has turned into a focal issue in the arrangement of clean water in urban zones with vast populaces and clean water is of most extreme significance to manage life. Our undertaking plans to mitigate the surface water of these destructive and monstrous waste by gathering it and arranging it off at the closest shore. This is basic in India with it's extensive variety of backwaters and shorelines occupied with tourism.

Keywords:

Aquatic life, backwaters, debris, floating waste, urban areas

Regenerative Hybrid Bicycle

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Abstract:--

Hybrid bicycle mainly focusses on energy regeneration. The hybrid bicycle system consists of a light weight, compact hub motor in the front wheel which is powered by a lithium-ion battery. Thisproject incorporates 3 ways of charging a lithium-ion battery: first by 220V AC wall outlet, second by power producing generators, and third by mechanical pedalling. In the present work, generators are connected to the rear wheel of bicycle which charges the battery.Battery is used to power an electric hub motor that runs the bicycle. When the battery drains out, by pedalling the bicycle power is stored. Thus mechanical energy is converted to electrical energy and stored in the battery. The generated power is used to run the bicycle and also used for charging the mobile phones. Thus human effort is reduced by running a bicycle with the hub motor and regeneration is done simultaneously.

Timetable Generation and Leave Management System

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Abstract:--

The Timetable Generation System is used to generate timetable automatically and Leave Management System is used to manage the leave records. Nowadays colleges have many courses in them and each course has many subjects to be thought. The faculties are teaching for more than one subject so creating the timetable for this kind becomes difficult, increases the paperwork and it consumes more time. It is a handson tabling method accomplished by taking care of constraints mandatorily, especially for preparing timetable in colleges with large number of students and resources like classrooms or labs. The application is developed so that admin have to login and enter the subjects, details of the faculty then the timetable will be generated. The leave management is integrated with the timetable generation system which is used to maintain the leave records of the faculty. It frequently works in related to leave functionality like fill application form, cancellation of leave and view the leave details. With the help of this system, user can apply leave online admin can approve it to higher levels and update the leave status online.

Keywords:

Timetable, constraints, scheduling, web application.

A Conceptual Framework for Green Supply Chain Management based on Drivers and Challenges

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Abstract:--

Green supply chain management has been seemed as an environmental innovation with considering several environmental affect into chain management. The essential reason of this find out about is to reveal the new progressive areas of this emerging field such as all those improvement that are relevant to environmental and social sustainability towards operation management and furnish chain management. Sustainable improvement has made top notch growth in establishing environmental and social sustainability in the direction of operations administration and the furnish chain. This paper also point out the reasons why any company adopt green supply chain management. The motive of this research paper is formed a conceptual framework for green supply chain management based on drivers and challenges. Several drivers and challenges are obtained by literature review

Index Terms—

Performance optimization, Improvements in supply chain management, conventional supply chain management, waste management.

A New Passive Filter Design for Harmonic Mitigation

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Abstract:--

Passive filters are generally preferred in power converters to nullify the high-frequency harmonics caused by pulse width modulation (PWM). Harmonic misrepresentation of voltage is significant in relative to power quality due to the interface between the huge dispersion of non-linear and time-varying single-phase and three-phase loads with power supply systems. The employment of passive filters is an effectual solution that can be used to attain harmonic mitigation to a greater extent mainly because filters are put forward to increase the efficiency. Half bridge converter (HBC) or Full Bridge Converters were usually used topologies. But the half bridge converter has vital role in power electronics and drives applications. Based on the area of applications the converter can be proposed in many ways. Hence modification is done with the existing half bridge converter by the addition of a new topology of passive filter at input side to mitigate the harmonics and voltage stress on switches. With these notes taken into account, the objective of this project is to design a new topology of passive LLCCLL filter and it is connected with the modified half bridge dc-dc converter for harmonic mitigation. Thus, it also improves the power factor of the load. Hence, simulation is carried out in PSIM software and hardware implementation will carry out in the medical x-ray equipment to measure the reduction of harmonic level.

Keywords:

Passive filter, pulse width modulation, half bridge converter, LLCCLL filter.

Study on stabilization of black cotton soil by using baggasse ash and polypropylene fibers

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Abstract:--

Soil is naturally occurring material that are used for the construction of all layers of pavement except the surface layer (i.e., concrete and asphalt) and that are subject to classification tests to provide a general concept of their engineering characteristics.

Proper treatment of problem soil conditions and the preparation of the foundation are extremely important to ensure a long lasting pavement structure that does not require excessive maintenance. Sometimes it is recommended to remove and replace such soil but in many cases, it is not most economical or even a desirable treatment. Strengthening provides an alternative method to improve the structural support of the foundation for many of the subgrade.

A large part of central India and certain portion of south India are covered with Black cotton soil. The project work carried out on black cotton soil with high swelling and shrinkage characteristics and extremely low CBR value and shears strength; in turn it describes the engineering properties of weak soil. To improve this type of soil by using bagasse ash and Polypropylene fibers this investigation an attempt is made to increase the CBR value and load bearing capacity of the black cotton soil by using baggase ash and Polypropylene fibers at different percentage 1%,2%,3%,4%

In the study CBR and miniature plate bearing test has been conducted by encasing the baggase ash and by lying Polypropylene fibers layer at top of soil. The CBR value gradually increases with increase at different percentage of baggase ash and Polypropylene fibers on top of soil layer

The modulus of subgrade reaction (K-value) increases with increase in bagasse ash at diffenent percentage . Group efficiency plays an important role in the increase of flexural rigidity and load bearing capacity of the Black cotton soil.

Keyword:

Soil stabilization,Blackcotton soil, bagasse ash, Polypropylene fibers, CBR,UCC,MDD.

Plagiarism detection using N-tuple Algorithm

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Abstract:--

Plagiarism is the major problem of scientific research. Plagiarism is representing, purposely or else, someone else's work, opinions, studies, argumentation, depictions, methods, computer code etc. Plagiarism has a broader meaning, interpreting someone else's manuscripts by replacing a few words by alternative word or swapping some sentences in their own technique is also plagiarism. Even imitating the words while explaining the situation or the study made by someone else is also a plagiarism if any content of your own is not added; by doing so, you create the belief that you have designed the argumentation though that is not the case. This is same as if you bringing together portion of work from numerous writers without stating the bases. Plagiarism also increases with the usage of cyberspace and huge amount of big data available. Plagiarism detection techniques are functioned by making a dissimilarity amongst usual and data processing. A resemblance is aimed at respectively pair of documents which are equally meaningfully. The N-Tuple is an algorithm to spot the Plagiarism which analyzes relative technique to detect intersection by comparing words that are mutual between document to be tested and the document in the repository. The proposed recognizing procedure is built on ordinary language by relating documents. The Map-Reduce based N-Tuple algorithm is used for dealing out with big data using Hadoop and to spot plagiarism in big data.

Keywords:

Plagiarism, N-tuple, Map-Reduce, HDFS

Machining of Aluminium Hybrid Metal Matrix Composite: A Review

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Abstract:--

Hybrid Aluminium metal matrix composites have been broadly used as alternative materials in automobiles, aerospace and structural utility due to the fact of their high resistance to wear and high ratio of strength to weight. Hybrid metal matrix composites are revolutionary engineering materials reinforced with two or more different materials which posses combined and improved physical , mechanical properties. The paper provides a review on milling machining characteristics of aluminium hybrid metal matrix. The paper additionally represents the effect of various machining parameter i.e. cutting speed, depth of cut,and feed on the response variables like surface roughness, material removal rate. This paper is an endeavor to provide brief recent work on prediction of cutting parameters & surface texture in hybrid Aluminium MMCs. By appropriately choosing these machining parameters, machining of Aluminium Hybrid metal matrix composites may be made economical.

Index terms:

Hybrid Aluminium metal matrix composites(hybrid Aluminium MMCs), Cutting speed, Feed, Depth of cut, Surface texture , metal removal rate(MRR).

Fabrication of Hybrid Power Generator

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Abstract:--

Uninterrupted power can be generated using a combination of non-conventional energy sources. In this experimental work, a combination of solar and wind energies are considered.A hybrid system is designed and fabricated with the integration of two energy systems that will give continuous power generation with their availability.A hybrid power generator with solar photovoltaic panel of size 35.1 m2 and Savonius vertical axis wind mill of height 1m and diameter 0.2 m is fabricated and tested for an average wind speed of 4 m/s. The measured output from windmill is 5 W and from solar panel is 40 W.

Testing of Embedded systems using ATLAS

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Abstract:--

Embedded systems are frequently employed in mobile products, they are exposed to vibration and other environmental stresses that can cause them to fail. Some embedded systems are exposed to extremely harsh environments. These applications are preparing embedded systems to meet new and more stringent requirements of safety and reliability is a significant challenge for designers. Critical applications and applications with high reliability requirements are the main candidates for on-line testing. The Automated Testing is required to expedite the time taken for testing. This process requires a well-defined language. The ATLAS is an IEEE standard in testing language.

Keywords:--

ATLAS; testing; real time embedded systems;

Implementation of 3D Printer

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Abstract:--

In this modern era, the process of making a 3-Dimensional solid object with the perfect dimensions is essential for industrial applications. This paper discusses about 3-D printing which utilizes the additive manufacturing technology. In this technology, the printer prints the object layer-by-layer according to the digital model with the required dimensions. The printing element used here is an ABS plastic filament which is highly durable compared to other filaments, the interface toolpath used between PC and the Printer is Pronterface, which is used to dump the G-code into the Arduino mega 2560. Here cura is used to convert the digital 3-D model into G-code. So, according to the G-code the printing process takes place. The main objective of this paper is to develop a cost efficient 3-D Printer so that a common man can make use of it.

Keywords:--

Stepper motor, Motor driver DRV8255, ABS (Acrylonitrile Butadiene Styrene) plastic, G-code, Extruder(Printing head), Power supply.

Improving License Plate Recognition Rate using Hybrid Algorithms

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Abstract:--

Vehicle license plate is the only trustworthy identity of a vehicle in Intelligent Transportation System (ITS), and correct vehicle identification mainly depends on accurate Automatic License Plate Recognition (ALPR) system. The aim of this paper is to design a robust ALPR system that can deal with different license plate formats with different character fonts. This paper highlights a hybrid license plate extraction algorithm, Connected Component Analysis (CCA) and spectral analysis based character segmentation, finally, Linear Discriminant Analysis (LDA) based character recognition with two separate alphanumeric recognition engines.

Keywords:--

Optical flow, edge analysis, spectral analysis, CCA, LDA

Detection of Deceptive Reviews in Online Social Media

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Abstract:--

In recent years, online reviews have become the most important resource of customers' opinions. These reviews are used increasingly by individuals and organizations to make purchase and business decisions. Unfortunately, driven by the desire for profit or publicity, fraudsters have produced deceptive (spam) reviews. The fraudsters' activities mislead potential customers and organizations reshaping their businesses and prevent opinion-mining techniques from reaching accurate conclusions. The present research focuses on systematically analyzing and categorizing models that detect review spam. Next, the study proceeds to assess them in terms of accuracy and results. We find that studies can be categorized into three groups that focus on methods to detect spam reviews, individual spammers and group spam. Different detection techniques have different strengths and weaknesses and thus favor different detection contexts.

Centralization of Mobile Detection in Examination Hall

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Abstract:--

As the technology is advancing at an exponential rate, the disadvantage of technology is parallel with it. One of the technology with equal amount of advantages and disadvantages is Mobile Phone, which is also known as Smartphone, Cell phone. The major disadvantage of Mobile is that, the students use it for unauthorized activities during examination. The usage of Mobile has increased in Exam hall, in order to reduce the usage of Mobile Phone in Exam hall, we can avoid using Mobile Detector. The Mobile Detector detects the signal from the mobile and it also detects the Mobile Phone even in silent mode, when it receives SMS, incoming call. In this project the Mobile Detector detects the mobile in three methods, the signal detector circuit detects the signals from phone, IR sensors detects the phone and LDR detects the intensity of the light which is produced by the phone. This project can be used in Exam halls to reduce the usage of mobile phones.

Synthima Approach to recall Textual Passwords

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Abstract:--

Textual passwords are the most generally used user authentication techniques now a days. Since there is a possibility to forget a password while maintaining a numerous accounts by a single user, hence password hint mechanism came into existence which usually reveals most of the information about the password. This mechanism encourages the hackers to hack the account easily. In this paper we are proposing a new mechanism called as SYNTHIMA approach which uses the contact list of the user to make user to recall the textual password.

Keywords:--

Salt value, Textual password, Password hint, Synthima, Contact list, Hashing function.

Stochastic Checkers Design and Implementation for Verification of FIR Filter

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Abstract:--

There is an increasing concern about the rising vulnerability of future computing systems resulting errors in the underlying hardware. Providing reliability unlike conventional fault tolerant techniques, without additional resources is a critical challenge in deeply scaled CMOS and post CMOS era. Hence designing a reliable system with low overheads is very important. To tackle this challenge, we take the benefit of different intrinsic resilience of application domains such as multimedia, recognition, mining, search and analytics which produces acceptable outputs despite occasional approximate computations. In this paper as a new approach of performing approximate error checking at greatly reduced overhead is proposed. Stochastic Checkers are designed by using stochastic computing (SC). This checker has main benefit of using compact arithmetic elements. Additionally it is innately fault tolerant because of its distinctive encoding of numerical values. Hence by using necessary Binary To Stochastic (BTS) converter and Stochastic To Binary (STB) converter error checkers are designed. Further Triple Modular Redundancy[TMR] is proposed to depict the advantage of Stochastic Checker (StoCK), Simulation for FIR filter applications is done using Xilinx Vivado design suite, as compared with traditional fault tolerant technique while maintaining high fault coverage.

Keywords:--

Approximate error detection, Binary To Stochastic (BTS), Fault Detection, Stochastic Computing, Stochastic To Binary (STB),Triple Modular Redundency[TMR].

Evaluation of Input/Output ECU in Trucks

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Abstract:--

The "Evaluation of I/O ECU in Trucks" which focuses on hardware and software level aspects of the Input/output ECU (I/O ECU). The I/O ECU interfaces with the sensors and actuators of the truck and the controlling action is taken by the High End ECU which interacts with the I/O ECU by exchange of data over a communication channel.

Keywords:--

Input / Output Electronic Control Unit, High Side Driver, Low Side Driver, High End ECU and Serial Peripheral Interface.

PPHOPCM: Privacy-preserving High-order Possibilistic c-Means Algorithm for Big Data Clustering with Cloud Computing

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Abstract:--

PCM is one of the methods used for C means clustering process in which there are two types of clustering, normal PCM clustering and important is High order PCM for big data clustering. The HOPCM method based on Map reduce for the large amount of the heterogeneous data is used. Finally a privacy preserving high-order possibilistic c-means algorithm to protect the private data on cloud by applying the background verification scheme to HOPCM a high-order PCM algorithm to tackle big data clustering by making the objective function minimal in the tensor space. Clustering is designed to separate objects into several different groups according to special metrics, making the objects with similar features in the same group. Clustering techniques have been successfully applied to knowledge discovery and data engineering. With the increasing popularity of big data, big data clustering is attracting much attention from data engineers and researchers.

Keywords:--

Big data clustering, cloud computing, privacy preserving, possibilistic c-means, tensor space.

Implementation of Advanced Encryption Standard in Vivado Design Suite

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Abstract:--

System on Chip (SoC) are devices which have a FPGA fabric and a processor in its architecture. SoC are used in remote applications where human intervention is not possible. In such circumstances reconfiguration of the devices are required which can be done on the FPGA fabric. One application where this technique can be used is Advanced encryption standard (AES) is a cryptographic technique where the plain text is of 128 bit. The key used for encryption are of different lengths like 128 bit, 192 bit and 256 bit. The keys are chosen according to the kind of encryption needed this paper describes the implementation of AES in Vivado with the key length of 128 bits. The implementation of the design is placing the design on the FPGA fabric and the wiring connections. The proposed design is realised using XILINX Vivado 2017.1.

Keywords:--

System on chip, reconfigurable logic, partial reconfiguration, FPGA, key length, Intellectual property

Modifying Dysarthric Vowels using Formant Transformation Technique and Vowels Synthesis

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Abstract:--

Speech is the most preferred way of communication. However, people with communication disorders finds it difficult to communicate fluently. Dysarthria is one such disorder where person lacks control over the muscles and articulators. These people may not be able to utter some of the phonemes properly. This decreases speech intelligibility. This paper is based on formants transformation for dysarthric vowels, with the goal of improving intelligibility. Formants are extracted using PRATT software and these formants are modified to more closely approximate the desired targets using transformation function. In order to improve a level of understanding, the modification of formants of dysarthric speaker vowel portion with the known vowel portion formants of normal speaker. After all modifications, the synthesized vowels is far better than dysarthric speaker vowels. Objective evaluation is carried out, and results show that the transformed formants are approximately close to normal speech.

Keywords:--

Dysarthria, Intelligibility, Improper articulation, Formant transformation, Synthesized speech

A Novel Differential Switching Capacitor DAC for 10-bit SAR ADC

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Abstract:--

An Analog to Digital Converter (ADC) is a circuit which converts analog voltage signal into digital signal form. Practically most of the data is characterized using analog signals but the input to different processors cannot be an analog signal hence it needs to be converted into digital signals, so that processors will be able to read, understand and manipulate the data. The basic process in conversion involves sampling and quantization of the input signal. The continuous time domain analog signal is converted to a signal discrete in amplitude and time.In this paper we propose a novel architecture for Digital-to-Analog converter for the purpose of implementation on successive approximation register type Analog-to-Digital converter. Compared to conventional converters the differential switching enhances the resolution time, efficiency and area. The architecture implemented on 45nm reduces the capacitor and hence enhancing both timing and area of the circuit.

Keywords:--

Differential Switching Capacitor, Digital-to-Analog, SAR-ADC;

College Automation System

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Abstract:--

College Automation System(CAS) is an online intranet system that is aimed to manage the working of college management activity using single platform. CAS can be accessed throughout the institution or a specified department. It is developed to maintain and facilitate easy access to information. CAS consists of different modules such as Admin, HOD, Faculty and Student and is capable of greatly atomizing work. Since human memory cannot store too much data and is volatile, there are chances for errors but with the help of a system that can store huge amount of data systematically, the error quotient is greatly reduced. The main purpose is to create an application which will manage the working of these different modules. Administration of the college is carried out by Admin. Performance analysis of a student is generated at the end of each semester. Students' as well as Staffs' should log-in with the system after which they can access as well as modify data as per the permissions given to them. Attendance of the students as well as marks will be updated by Faculty. For this the users must be registered. CAS can be used as a knowledge or an information management system for the college. For a given student or staff, can access the system to either upload or download some information from the Amazon Web Services(AWS) cloud.

Keywords:--

Administration, Maintenance of Records, Performance analysis, Document Updation, AWS Cloud.;

Low Cost Automatic Monitoring of Electrical Distribution System

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Abstract:--

Electrical power distribution carries electricity from transmission system to individual consumers. Hence, the Electrical power lines are distributed in the form of network for proper power distribution to end consumers. As the network of power distribution is growing in complexity, detecting and locating the faulty point in the system is becoming cumbersome. Due to the fault occurrence break down of power happens between the customer premises and base station. Breakdown of power leads to high economic losses, especially in the industrial areas. So to avoid economic losses in the industrial areas we need to maintain the power all the time without any break down and also monitor the electrical distribution system Hence, we propose a model for (i) Identification and automatic intimation of fault occurrence in a particular power line (ii) To detour the faulty line and to supply power for the remaining lines by using the temporary feeders. (iii) To detect the fluctuating voltage and periodically inform the quality of voltage to the substation authorities through Global System for Mobile communication (GSM). (iv) To automatically notify the power theft in between the distribution substation and consumer premises. The proposed work is implemented using Nuvoton microcontroller and simulated using Keil Microvision.

Keywords:--

Feeder; Distribution Network; PowerTheft;Voltage Fluctuation

Spatially Resolved Soft X-ray Images to Understand the Variation of Total Solar X-ray Flux

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Abstract:--

In day to day life, new technologies are emerging in the field of Image Processing, especially in the field of Astronomy and Astrophysics. The most eminent celestial body is the Sun. Through Image Processing, important features of the Sun are studied. The objective of this study is, segmentation of the solar features (Active Regions, Coronal Holes, Background, and X-Ray Bright Points), estimation of intensity, and determining the individual intensity of the solar features for a period of one year (2016). The proposed methodology for Segmentation is Thresholding technique. This technique is applied on the images obtained from Hinode X-ray Telescope (Hinode/XRT) to measure intensity variations of solar features.

Keywords:--

Hinode, XBPS, active region, coronal holes, GOES.

Indian Sign Language Recognition System for Atm's to Assist Visually Challenged People

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Abstract:--

About 285 million people around the world are visually impaired and about 35 million are blind. There are 3 kinds of blindness- night blindness, complete blindness, and Colour blindness. One of the problems they face in their routine is during ATM transactions. Though ATMs are inscribed with Braille it does not completely eliminate the problems faced by blind people. In the present study, we propose an Indian Sign Language recognition system using Vision- based Gesture Recognition system for Securing pin in ATM for blind people instead of Device-based Gesture Recognition system. Device-based approach for Hand Gesture Recognition System has been designed with external devices such as data gloves, markers, sensory gloves, colored gloves etc. Among the above-mentioned approaches, Vision-based approach is the most natural way of constructing Hand Gesture Recognition System. The aim of using Indian Sign Language Recognition system for ATM's is to assist the Visually Challenged People. Also the proposed system will overcome the problems identified in the existing system such as Glove should be of high precision else if low precision sensors are used the system may fail to capture the gestures appropriately. The Glove is embedded with many sensors and wires which make the whole system very bulky and difficult to carry around. The system along with controllers, cables and sensors is very complex.

Profit Maximization through Customer-Satisfaction-Awareness in Cloud Computing

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Abstract:--

Cloud consists of a homogeneous set of hardware and software resources. A rapid Evolution of business strategy in cloud platform affects the customer's service. Load-balancing strategy can be implemented as a major role in platform service like (i.e., Dependability, Safe-resource managing, Fault-tolerance) and quality of service assigned to modules. Those modules can be divided into three major modules Infrastructure Service Provider (ISP), Business Service Provider (BSP) and Client are the three fundamental parameters. The ISPs like AWS, Oracle etc., frames some set of service policy, terms and conditions with BSPs. The BSPs deal with the clients, in meeting the necessary requirements with respect to the Quality of Service. BSPs will monitor the C-graph, C-request and simulate the PM-graphs in order to analyse the customer need. Hence, the availability of services are provided to the client as a solution for which, the data organization can be used for the required user interfaces available at different service providers by limiting the mobility, once a customer login through the web interface.

Keywords:--

BSP, ISP, Quality of service, C-graph, C-request, PM-graph.

Stabilization of Black Cotton Soil by Using Bagasse Ash and Polypropylene Geo Fibers

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Abstract:--

Soil is naturally occurring material that are used for the construction of all layers of pavement except the surface layer (i.e., concrete and asphalt) and that are subject to classification tests to provide a general concept of their engineering characteristics. Proper treatment of problem soil conditions and the preparation of the foundation are extremely important to ensure a long lasting pavement structure that does not require excessive maintenance. Sometimes it is recommended to remove and replace such soil but in many cases, it is not most economical or even a desirable treatment. Strengthening provides an alternative method to improve the structural support of the foundation for many of the subgrade. So the black cotton soil are stabilized by adding bagasse ash at different percentage 0%,1%,2%, and 3% addition to this polypropylene geo fibers mat have been laid to improve the strength parameters. This paper indicates significant increase in properties of black cotton soil which is obtain at 2% replacement of bagasse ash.maximum strength properties of clayey soil was obtained at 2%(baggesse ash) the strength was further increased by laying polypropylene geofiber mat.by this black cotton soil has been improved its engineering properties can efficiently withstand applied load

Keywords:--

Black cotton soil, bagasse ash, polypropylene geo fibers, soil stabilization, OMC, MDD, UCC, CBR.

Fall Detection System for Health Applications using Arduino

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Abstract:--

This study is to develop a fall detection system for health applications. According to the research the falling/collapsing among the elderly population has become an serious issue. Special attention should be given to elderly persons living alone as they are not found for hours after the fall which makes the situation more complicated. The injuries maybe minor one or life threatening one .In cases many a times when a fall has occurred it is unnoticed. The damage caused by not giving immediate medical help is more than the damage caused by injuries. It is also useful for Border Security Forces standing long hours guarding the nation .The main objective of this paper is to develop a wireless fall detection system to detect a fall and transmit the information wirelessly to the caretakers mobile. The detection system consists of a MPU6050 sensor which consists of accelerometer and gyroscopes. Once the fall is detected the sensors will communicate with the microcontroller via zigbee. The microcontroller will send a message to the caretaker via the GSM. The system consists of three LEDs to define the operations of the device. The red led indicates the establishment of communication, the white led indicates the power ON condition, the green LED indicates the power ON condition. The system consist of a wearable device which is compact and can be worn around chest.

Design and Analysis of Reliable Memory Cells

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Abstract:--

Static Random Access Memory (SRAM) assumes an essential part in cache memory of PC, analog to digital converters, high speed registers and in many other digital systems. The SRAM is beneficial as it doesn't require refreshing the data until the point when the power is ON. Predictable scaling prompts the need of high performance, less power dissipation with minimal cost. When SRAM cells are used in space applications, radiation effect plays an important role on its functioning. The memory cells are susceptible to environmental conditions, resulting in soft errors or single event upsets. Because of these induced errors, entire system becomes unreliable. In order to avoid soft errors, the SRAM cells are radiation hardened-by-design through adding more number of transistors to the conventional circuit, thereby increasing more reliability in the device. This paper presents the CMOS SRAM design and simulation. A thorough analysis has been done for parameters like power efficiency, delay, rise and fall time using 180nm technology library files. SRAM cells schematic is designed using pyxis tool and simulated with the help of ELDO(Mentor Graphics) tool. An attempt is also made to find out read delay, write delay for a constant supply voltage for different memory cells. All the simulation results are carried out at fixed 27℃ temperature.

Keywords—

power dissipation,reliable memory cells, read operation, SRAM ,write operation.

A Novel Approach for Breast Cancer Detection

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Abstract:--

Cancer is one of the most dangerous life-threatening diseases. Out of all the different types of Cancer, Breast cancer is the most common which is mostly seen in women of age 30-60. According to Breastcanceruk.org, every 1 in 8 women in UK is affected by Breast Cancer. Even though a permanent antidote is yet to be found for Breast Cancer, it can be prevented with early detection. Certain clinical method is used for the identification of Cancer. Our approach for detection of Cancer tumour is by using Image Processing technique through MATLAB code for the detection of type of tumour and the situ of the tumour. In the code a mammogram image is taken as input, then we perform Otsu thresholding method to separate the tumour part from the background. Then we apply Artificial Neural Network to find required parameters. Accuracy, Selectivity and Specificity can be obtained through the algorithm.

Keywords-

Otsu Thresholding, Artificial Neural Network.

Data Analytics in Healthcare: A Survey

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Abstract:--

The healthcare industry at present generates great amount of data starting with reporting of patient related data , health and medical devices related data, drug research data, health insurance data, clinical outcome data, laboratory data, images with graphic, audio, video data, health policy data and patient's feedback data. This generated data is both structured and unstructured. In today's digital era, it is mandatory that these data is digitized . The digitization of healthcare data in return will help providing enhanced quality of care, with reduced healthcare cost.With information in digital form, healthcare organizations can use available tools and technologies to analyze that information and generate valuable insights in treating. We took diseases like Hytertension, Diabetes, Dengue and Malaria , Pneumonia and made data analytics on these.Data analysis which helps in improving the decision making and to cater enhance solution for diseases.

Foot step power generation using Piezoelectric plates

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Abstract:--

Energy is one of the basic necessities in the modern world. The energy requirements are increasing due to urbanization. Therefore one cannot always rely on the existing methods of generating electricity. This project aims to generate power by walking on any piezo coated platform.The basic principle of this project is piezoelectric effect. The piezoelectric plates are placed under the walking tile. The energy exerted on the tile due to the pressure applied while stepping on it, will cause the piezoelectric plates to convert from mechanical energy into electrical energy. The obtained electrical energy is stored in a rechargeable battery which can be used for powering up devices like mobile and domestic bulbs. This system can be installed at homes, colleges, schools, offices, parks, railway stations where the people move around the clock. Therefore, in this project we are utilizing the human footsteps for producing electricity.

Design of LDO Regulator in CMOS 45nm Technology

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Abstract:--

The transistor model is designed for outline of two different LDO Regulators having a differential stage stacked by current amplifier and the voltage feedback. The principal LDO has a consistent bias current. The LDOs were analysed to verify the transistors operations from weak inversion to strong inversion. It is demonstrated that in these LDOs the output voltage might be higher than the input reference voltage at minimum load current, and both the circuits begin "to follow" to achieve desired voltage with respect to load current depending on bias voltage. This paper additionally concentrates on outlining a particular LDO Regulator to fulfil the given requirements. The circuits were intended for 45 nm gpdk CMOS Technology and simulated in CADENCE Spectre tool.

Keywords—

LDO, Weak inversion, Moderate inversion, Strong Inversion, regulator.

A Non-Contact Method to Measure Thread Pitch Using Image Processing

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Abstract:--

This paper describes a novel approach to measure the thread parameters of a bolt using laser triangulation technique. The thread parameters are obtained by taking series of laser incident images of the bolt and measuring the laser profile of each image. The paper also describes the process of image acquisition using laser triangulation and extraction of data points from the image. The proposed method provides a non-contact and a faster method to measure the thread parameters compared to traditional techniques.

Index Terms:--

Image processing, laser triangulation, noncontact measurement

Efficient and Private Scoring of Decision Trees Based On Support Vector Machines and Logistic Regression Model

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Abstract:--

The novel protocol for privacy-preserving classification of decision trees is developed. To derive the parameters for our decision tree classification protocol, we again improved the Support Vector Machines and Logistic Regression concept for classification. We have taken two benchmark datasets from the UCI machine learning repository for our proposed protocols. Based on the protocols, we have proved that our system provides more efficient results in the privacy-preserving classification and overcome the computational and communication complexities. And also we provide accuracy and run time results for the classification of the data. To perform the scoring in a privacy-preserving so that individuals do not have to share their personal data with anyone in a clear manner but may still benefit from these types of personalized services. Our protocols are information theoretically secure and, unlike previously proposed solutions do not require modular exponentiations.

Index Terms:--

Privacy-preserving classification, decision trees, support vector machines, logistic regression, secure multiparty computation, secret sharing, privacy-preserving computation.

Design and Implementation of a Smart Parking System using IoT Technology

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Abstract:--

With the rapid increase in the number of vehicles in urban areas, drivers waste a lot of time and fuel to find an appropriate parking spot in a commercial parking lot. Moreover, approximately 30% of urban congestion is created by drivers cruising for packing space. This paper aims at providing a low cost solution to this problem by creating a Smart Parking Space using the technology of IoT and an inexpensive processor - NodeMCU. This amalgamation of embedded systems, connectivity and application will provide the user with the information of available parking spaces in a parking lot and also allows the user to reserve a parking space in the lot within the timestamp over the MQTT protocol. A Smart Parking Technology, as such, will help optimize space usage, improve the efficiency of the parking operations and help smoother flow of vehicles. Further, this paper proposes a completely automated and smart parking space without much human intervention by including fire alarms, temperature and humidity sensors, water sensors for avoiding waterlogging and light sensors for automatic control of lights. On the whole, this paper focuses on designing smart parking system, beneficial to both the users and provider in terms of time, fuel and infrastructure.

Index Terms:--

NodeMCU, smart-parking, IoT, fuel wastage.

Fast and Secure Transmission over a Network Using Voice Authentication

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Abstract:--

In many emerging networks, a problem of broadcast occurs where efficiency and security are under the scanner. The challenges that we all face whilst devising systems for the convenience of transmission of messages is if the contact between the sender and receiver, the dynamics of the sender and the availability of a trustworthy key generation center. Our proposal is a hybrid of traditional broadcast encryption and group key agreement. In said system, each member shall maintain a single key pair (public/secret). On seeing the public keys of the nodes involved in the network, a remote sender can securely broadcast to any intended node chosen in an ad hoc way. Following this prototype, we instantiate a scheme that is proven secure in the standard model. Even if all the non-intended members try, they cannot extract any useful information from the transmitted messages. As soon as the encryption key is extracted, both the computation overhead and the communication cost are independent of the group size. Furthermore, our scheme facilitates simple yet efficient member deletion/ addition and flexible rekeying strategies.

Index Terms:--

Broadcast encryption, public key, Ad hoc.

Automated Robo Soccer using OpenCV

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Abstract:--

In today's fast advancing aeon of the Internet, A novel branch of study has emerged known as "Internet-of-Things". The project mainly consists of study, development and carrying out of a model for Automated Robo Soccer i.e, tracking circular object using the Python programming language which provides OpenCV libraries. This project also exhibits how different electronic devices like a processor, motors, web camera etc., work together without a physical connection to solve given problem at the hand. This model makes use of an Raspberry-Pi3-Model B as the microprocessor using which the implementation has been done. Python is a powerful Object Oriented Programming language which can be used in alternate to matLab for image processing, data analytics etc. This paper exhibits the student project work on recognition of ball and taking it to its destination using the Python OpenCV library.

Index Terms:--

Internet-of-Things (IoT), Raspberry Pi (RP), OpenCV, SciPy, NumPy

Home Automation and Security Using Smart Phones

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Abstract:--

The Internet of Things (IoT) is a concept of communication between people and smart objects, e.g. mobile phones and sensors, and communication among Internet connected devices. A number of applications rely on enabling the objects in everyday living environment to communicate with each other in order to exchange the information they have collected from their surroundings. One of the valuable applications is home automation where all the devices can be accessed and monitored. This becomes a problem as how to manage and control these increasing various appliances efficiently and conveniently so as to achieve more comfortable, security and healthy space at home. The smart home control system uses a smart central controller AT89C51 interfaced with various sensors. A series of control modules have been developed in the network to control directly all kinds of home appliances. Application servers, client computers, tablets or smart phones can communicate with the smart central controller through a wireless interface.

Index Terms:--

Smartphone Application ; Android Application ; home security ; home automation ; sensors.

Gas leakage detection and controlling system through IoT

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Abstract:--

Nowadays the major issue encountered in our daily life is gas leakage. LPG is a highly flammable gas when explodes it causes huge damage to life and property. To reduce such treacherous situations, we need to launch a few corrective measures to detect the gas leakage immediately and control the gas leakage through android app. Locating the gas leakage is not an easy process and controlling the gas leakage is onerous. Our main aim is to minimize such treacherous situations in kitchen using IoT. The main aim is to construct IoT based gas leakage detection and controlling system. With the help of a gas sensor we can detect the leakage and using the android app and actuator we can control the gas leakage and turn off the main power supply as to prevent explosions.

Index Terms:--

IoT, Android app, sensors.

Text image to braille code converter

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Abstract:--

The estimated number of visually impaired people in the world is 285 million, 39 million blind and 246 million having low vision. These people face many issues in accessing the text when they are not in braille code. Here we are proposing a prototype to help those blind people which converts text in the image to braille code. A camera is used to capture the image, captured image will be processed by image processing techniques and the same will be converted to text using matlab. The detected text will be transferred to arduino through serial communication. The Arduino will be programmed in such a way that, it recognizes each and every character and converts it to braille code using servo motor. The motors will be placed in 3 x 2 array of matrix representing braille code. The servo arms will be protruded out for its corresponding letter by rotating it in 90 degrees which depicts the particular alphabet. Hence it provides the tactile sensation of braille dot and visually impaired people will be able to read.

Index Terms:--

Matlab, Arduino, Serial Communication, Braille Code, Servo Motor

Singular Value Decomposition based Image Denoising

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Abstract:--

Noise in image degrade the quality of the image. The aim of denoising is to reconstructing an original image from noisy image by securing important features. For visual quality and extraction of edges and texture informations from the images, denoising is necessary. It is a necessary preprocessing step for many applications such as image compression, segmentation, identification, object recognition etc. In this paper, images are corrupted by Gaussian noise which is additive in nature. A recent development in this area of research is the use of Singular Value Decomposition (SVD).

Index Terms:--

Image denoising, additive Gaussian noise, K-means clustering, SVD

Study of Chromospheric variability from Ca II K spectroheliograms Using Image Processing Tools

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Abstract:--

The long-term synoptic observations in the resonance line of Ca-II K (singly ionized Calcium) lay foundation for a fundamental database to a variety of retrospective analysis of the state of solar magnetism. The Ca-II K observations began at the Kodaikanal Solar Observatory (KSO), in later part of 1907. It is particularly important as it provides a unique data set in the world for the study of chromospheric activity and its variability as a function of the well-known solar magnetic 11-year cycle. It is known that the Ca-II K line is a very good indicator of chromospheric activity and variability of the Sun and also Sun-like Stars. The spectroheliograms will be used as a proxy for magnetic elements of the chromosphere i.e. the intensity of chromospheric features is well correlated with the strength of magnetic field associated with them. That means there is a one-to-one correspondence between the chromospheric emission features with underlying photospheric magnetic elements.

Here, the digitized and calibrated Ca-II K spectroheliograms observed at KSO for the period 1913-1921 (taking the alternate years in the range) are used for analysis. It is proposed to segment the different chromospheric features such as plages and chromospheric network (both active and quiet network) and derive their intensity and area. Then estimation of the total contribution of these features to the variability of the chromosphere is also carried out, as it is extremely important. Various image processing techniques for this analysis are implemented using MATLAB 2016a.

Index Terms:--

Sun - Chromosphere, Spectroheliograms, Chromospheric features, Ca II K line, Image processing, MATLAB.

Body Sensor Network

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Abstract:--

In the modern day life keeping track of the health status of the patient at home isn't easy. So our system puts forward a smart patient health tracking system that uses Sensors to track patient health and uses GSM technology to inform their concerned ones in case of any issues. Our system uses ECG, Pulse rate and temperature sensors to keep track of patient health. If system detects any abrupt changes in patient health, then it automatically send an alert message to the registered mobile number and it will display all sensor data on LCD. The system is developed for home use by patients that are not in a critical condition but need to be timely monitored by doctor or family.

Index Terms:--

Monitoring, Microcontroller, GSM, ECG, Pulse rate, Temperature sensor.

Smart Home Monitoring System Using IoT

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Abstract:--

The home monitoring systems are important in modern life aspects. People are using such systems to be conscious of what could happen at their home when they are away, making them to feel more secure. Fire alarm with room temperature control is implemented here. It can see to it that the temperature of the room is always in the specified value given by the user and can alert the resident from any risk factor like fire at home and suppress it if necessary. We create smart home setting and IoT application is designed fulfilling the scenario requirements. We also implemented smart home method in software and hardware and also verified the system's operation. It can be further used to monitor house's security status remotely through collected data from the sensor using internet.

Index Terms:--

MQTT, IoT, Web Services Smart Room

Solar Panel Monitoring for Multiple Fault Detection and Prevention

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Abstract:--

Solar panel installations are becoming increasingly popular as even solar parks are also blooming. These solar panels are generally employed in remote places, dry and dusty environments which is the case in tropical countries like India for green power generation. But the degradation of the solar panels with time is a common prevalent problem which results in the degradation of power output. In another way there are eminent faults in solar panels such as Dust accumulation, Micro cracks, Hotspots, Delamination which results in considerable degradation of output. This paper mainly focuses on increasing the efficiency of panels by automatically detecting and preventing the multiple faults occurring in solar panels which are remotely placed.

Index Terms:--

Photovoltaic, Faults, Hotspot, Micro Cracks.

An Efficient Resource Allocation and Scheduling Of Jobs in HDFS to Meet Deadline

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Abstract:--

Resource allocation and scheduling on clusters are required to generate the power of the resource pool such that the service provider can meet the quality of service requirements of users, which are often captured in service level agreements (SLAs). This paper focuses on resource allocation and scheduling on clouds and clusters that process MapReduce jobs with SLAs. The resource allocation and scheduling issue is an optimization problem using constraint programming and MRCP-RM algorithm is adapted that can effectively process an open stream of jobs where each job is characterized with an service level agreement which comprises an earliest start time, a required execution time and a deadline. A detailed performance evaluation of MRCP-RM is conducted for an open system subjected to a stream of job arrivals using both simulation and experimentation on a real system. The experiments on a real system are performed on a Hadoop cluster that runs our new Hadoop Constraint Programming based Resource Management algorithm (HCP-RM) that incorporates a technique for handling data locality. The performance evaluation shows the impact of resource allocation and scheduling of jobs which generates a schedule that leads to a lower proportion of jobs missing their deadlines and also provide insights about the system behaviour and performance. In the simulation experiments, it is observed that resource allocation and scheduling of jobs achieves on average an 82 percent lower P compared to a technique from the existing literature when processing a synthetic workload from Facebook. Furthermore, in the experiments performed on a Hadoop Cluster, it is observed that HCPRM achieved on average a 63 percent lower P compared to an EDF-Scheduler for a wide variety of workload and system parameters experimented with.

Index Terms:--

Resource Allocation and scheduling on Clusters and Clouds, Hadoop Scheduler, and Constraint Programming.

Microcontroller Based Automated Garbage Level Detection and Segregation

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Abstract:--

Garbage and waste disposal is a huge problem that affects India. Disposing of waste has huge environmental impacts and can cause serious problems.Waste disposal has been a problem in India for a few years, yet the problem hasn't been solved. When the waste starts to accumulate due to increasing population, the garbage ends up in landfills, rivers, oceans, which liberates harmful toxins that affect the entire ecosystem. One of the possible solutions is to segregate the waste at the disposal level itself and use the segregated waste for various purposes like to generate energy, use them as manure. In our country the collection, transportation and disposal are disorganized and chaotic. Developing a mechanized system to make our world a cleaner and greener place is our main objective. Thus, we have proposed a system to detect the level of garbage, and segregate the waste into mainly two categories wet and dry. The wet waste is then converted into manure. We have proposed a system to give back to our mother earth and do our bit to protect the environment and make our country a cleaner place to live in.

Index Terms:--

Automation, Smart Bin, Waste Segregation, Moisture Sensing, Composting

Simulation of ZVS inverter with space vector modulation using Simulink

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Abstract:--

In this paper, a ZVS inverter with high efficiency are expected since switching losses are reduced with a proper design. In order to reduce zvs condition the auxiliary circuit are connected which includes inductor, capacitor and switches are embedded. It is impossible to realize the maximum efficiency with conventional method. Space vector modulation is a digital technique and specified by eight switching states. switching pulses using space vector modulation controls fundamental voltage , reduces the harmonics and also improves the performance of the inverter. This is simulated using MATLAB Simulink.

Water Monitoring System Using ARDUINO

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Abstract:--

Water is essential for everyday life. The quality of water is depleting everyday due to human activities. It is required to maintain the quality of water so that it becomes liable for drinking. The scope of this paper is about building a water quality monitoring system which enables us to measure the quality of water. Presently, internet of things (IOT) and smart sensors are being used to monitor, collect and analyses the data. The water monitoring system mentioned in this paper is economical, efficient and reliable. Smart sensors and ARDUINO Uno are used to this system. The results from the analysis of the data, measured by this system are sent to the officials or the authorities so that they can take necessary actions to improve the quality of water if it is found contaminated.

Keywords:--

Internet of things, Water monitoring system, ARDUINO

Synthesis and Analysis of Shape Memory Effect in Shape Memory Polyme

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Abstract:--

Shape memory polymers (SMP's) are materials capable of recovering their permanent shape from a temporary one upon the exposure to a specific stimulus, such as heat, stress, magnetic field. The shape memory effect in polymers comes from their unique molecular structures. If only small loads are needed then shape memory polymers offer an attractive alternative to shape memory alloys due to their low manufacture cost and ease of processing. The main purpose of this project is to synthesis shape memory polymer using polyethylene glycol (PEG-6000) as the soft segment and isophorone diisocyanate (IPDI) as the hard segment and to analyze its shape memory effect. Additional fillers such as CNT and Graphite can be used during synthesis to enhance rigidity and strength of shape memory polymer.

Key words: --

Shape memory polymer, Shape memory effect, Soft segment, Hard segment.

Static, Modal and Fatigue Failure Analysis of Trailing Arm Bracket of Rear Suspension System

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Abstract:--

Trailing arm is a leading portion of Suspension system which is coupled to the vehicle chassis and rear end is connected perpendicular to the axle of the system.

A bracket is welded at mid-point of the trailing arm where shocks are placed over it. The main function of the trailing arm is to allow the axle to move up and down using the coil spring and limit the movement, when driving on the uneven roads. Because of this the bracket area is highly affected by torsional loading resulting in break torque, hence there will be chances of failure of bracket.

In this project work trailing arm bracket is designed by using modelling software Solid works, meshing and analysis was carried out in ANSYS V16. The modification of the bracket was carried by increasing the thickness from 2.5 mm to 5.5 mm. Than validation of Von Mises stress is carried by both theoretical and analysis results and also fatigue life of modified bracket has been carried out. Modal analysis is also carried out to find the natural frequency of the component. The result of the analysis leads in increasing the strength and fatigue life of the trailing arm bracket.

Key words: --

Trailing arm, static analysis, fatigue analysis.

Internet of Things (IoT) based Emergency Reporting and Management System using Ubidots and Firebase

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Abstract:--

Emergencies never come with prior intimation and in real world scenarios, detecting such emergencies and reporting them is a real challenge. The failure to respond to an emergency may be due to several factors like traffic congestion, lack of awareness of the emergency helpline details or not being in a position to inform because of the trauma people go through during such critical times. The use of Internet of Things based emergency reporting and management system using ubidots and firebase will see a seismic shift in the way emergencies are handled especially in a country like India where traffic plays a big hurdle in providing efficient emergency management. This project contains the proposed system to overcome common problems of having manual intervention while reporting an emergency and managing it. Internet of Things (IoT) can be defined as a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. Combining the technologies of both Internet of Things (IoT) and the smartphone, we have an application which during emergencies shall help at a faster rate in addition to being easy to use.

Key words: --

Ubidots, Firebase, Smartphone

Classification of YouTube Data based on Sentiment Analysis

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Abstract:--

Nowadays, Big data and Data mining have attracted a great deal of attention in the information industry, due to the wide availability of huge amounts of data and the urgent need for turning such data into useful knowledge through predictive models. Corporate companies are using social media for improving their businesses, the data mining and analysis are very important in these days. Thus, Interaction and review are established with the customers and the concept, characteristics & need of Big Data & different offerings available in the market to explore unstructured large data. The paper deals with analysis of YouTube Data. The analysis is done using users Sentiments features such as Views, Comments, Likes and Dislikes. We used Linear Regression classification approach to classify the YouTube Data. The experimental results are given accurate results which illustrated that it is influential practice and a key enabler for the social business. The insights gained from the user generated online contents and collaboration with customers is critical for success in the age of social media

Influence of tool rotational speed, feed rate and tool material on mechanical properties of friction stir welded AA6061 and AA6082 Aluminium alloy.

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Abstract:--

The major objective of this work is to investigate the effect of tool rotational speed, feed rate and tool material on the tensile properties of the friction stir welded AA6061 and AA6082 aluminium alloys plates of thickness 4mm. Tensile test was done for the joints prepared at different trials, fracture analysis was done by the help of scanning electron microscope(SEM). From the analysis it was found that there is no effect of tool material on the strength of welded joint. Joint prepared at the tool rotational speed 1400rpm and feed rate 31.5mm/min shows the highest joint efficiency. SEM image of the fractured surface clearly shows that fracture occurred was of the type ductile.

Keywords:--

Friction stir welding (FSW), Tensile strength, SEM, AA6061, AA6082, EN39B, HSS.

Analysis of Power Transformation in SCIG Based Wind Turbine Using Matrix Converter

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Abstract:--

In the grid connected network, it is especially difficult to support the critical load without uninterrupted power supply. At present the large dispersion of wind power system is considered as an effective means for power production. This work deals with the power transfer in SCIG based wind turbine using matrix converter. In this proposed paper represents the wind energy conversion scheme based on matrix converter topology. The SCIG has been widely used and utilized in wind generator application. This project utilise Matrix Converter fed by SCIG to convert AC-AC power conversion of different frequency and voltage into constant frequency and voltage. Design of SCIG based wind power generation system with the help of matrix converter is analyzed using MATLAB/SIMULINK .

Modelling and Analysis of Mode-I and Mode-II Delamination Onset in Composite Laminates

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Abstract:--

A composite is a structural material that consists of two or more constituents combined at a macroscopic level and not soluble in each other. The advantages of composites over conventional materials are its Light weight, High Strength, Design flexibility, Dimensional Stability etc. Although composite materials are advantageous than conventional materials, there are some defects in composite materials too, which are Fibre-matrix debonding, fibre misalignment, Delamination, Matrix cracking, Impact damage etc. Among these defects, Delamination is one of the major modes of failure for composite materials wherein separation of two adjacent plies in a composite laminate takes place. Delamination can be studied using two approaches, viz., Virtual Crack Closure Technique (VCCT), Cohesive Zone Modelling (CZM). VCCT is the study of damage based on the Energy Release rate of the material undergoing Delamination. In the present study Finite Element Modelling and Engineering analysis of DCB and ENF standard specimens have been carried out by using VCCT approach. Various parametric studies on behaviour of delamination with different material properties, ply orientations and a case study on different crack lengths are also studied and their effect on Delamination is presented.

Index Terms :–

Composite Materials, Delamination, Fracture Mechanics, VCCT

IoT Based Car Parking System

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Abstract:--

Present day's car parking has become a major issue in urban areas due to lack of parking places, facilities and increased amount of vehicles. One of the research has said that three-fourth of life time of a car is spent in parking and rest on roads. More time is wasted in search of a place to park our vehicle. To avoid this wastage of time, an advanced method is used to build a smart car parking system which uses the Internet of Things to make it easy and comfortable. IoT is basically connecting embedded to internet. The measurement of the parking lot is noted and divided into many blocks that fit a car into it and the details of the parking area in an apartment or in a mall will be updated as a status in the IOT URL website. The user can find the details of the parking area by opening the website in any device. Many sensors can be used to find the free block in the parking lot of an apartment or mall. The IR sensors are used to detect the free block and indicate the details in the IoT website. This paper uses the ultrasonic sensor to detect the presence of the car and also an alarm or buzzer as an alert system. An ultrasonic sensor is placed at the entrance of each block.

Whenever a car enters, the sensor detects and uploads the information to the website using the IoT. It contains the details about the number of blocks available in the parking area. This system also includes a counting technique to find the number of cars parked in the lot. The LCD will show the direction to the available free blocks in the parking lot and the buzzer will turn on when the car enters the minimum range from the wall or block to avoid the collision. The total operation of the system is controlled by a ARDUINO microcontroller which does the IoT operation, sensor operation and alert system. NodeMcu is used to connect the entire system to the internet using Wi-Fi. This system also implies automatic payment method, in which the total amount or charges for parking will be updated to the user via message using GSM module. Every user will be provided with the specific RFID card. The payment charge will be applied whenever the user swipes the card. The future a GPS module can be inserted to pin-point the exact location of the parking lots in unknown areas.

Face detection using image processing on MATLAB

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Abstract:--

Face detection has been a fascinating problem for image processing researches during last decade because of many important applications such as video face recognition at airports and security checkpoints, digital image archiving, etc. In this project, we attempt to detect faces in a digital image using various techniques such as skin color segmentation, morphological processing, template matching. Reasonable results were obtained with color segmentation, template matching at multiple scale, and clustering of correlation peaks. This project presents a technique for detecting human face in digital color images. This is two steps process which first detects region containing human skin in color image and then extracts information from these regions which might indicate location of a face in image. The skin detection is performed using a skin filter which relies on color and texture information. The face detection is performed on color image containing only detected skin areas. A combination of thresholding and mathematical morphology are used to extract objects features that would indicate presence of a face. The face detection process works predictably and fairly reliable, as test results show. This project describes the technique for human face detection and tracking using a modified version of the algorithm suggested by Paul viola and Michael Jones. Viola jones algorithm was based on object detection by extracting some specific features from the image. We used the same approach for human face detection. Simulation results of this developed algorithm shows the human face detection supporting up to 50 human faces. This algorithm computes data and produce results in just a mere fraction of seconds.

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Wireless Power Based Charging of EV's Using Multilevel Inverter

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Abstract:--

Wireless power is more convenient and safer system to transfer the power from one end of system to another end system with coil having high inductance value. Wireless power transfer systems is employ to charge the battery pack of electric vehicles than conventional plug-in system. A wireless method of charging is suitable for charging massive electric vehicle by having multilevel inverter across input side of the system. In this paper we used the 5 level cascaded H bridge multilevel inverter. The multilevel inverter is employed to synthesis of several levels of dc voltages. The H bridge multilevel inverter can operate at both fundamental switching frequencies that are higher switching frequency and lower switching frequency. Even a switching frequency is low system will have lower switching loss and higher efficiency is achieved. The 5 level H bridge multilevel inverter can reduce torque and flux ripples. The using of H bridge multilevel inverter which helps in receiver side to have desired battery without any changes in its terminal voltage irrespective of its frequency by applying H bridge multi-level across the transmitter side battery gets charged.

Microbial Fuel Cell a Green Approach for the Utilization of Waste for the Generation of Bioelectricity

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Abstract:--

Sustainability is a worldwide test. There is a requirement in each district of the world to put time and cash into creating answers for address the worldwide difficulty. The more we keep expending a bigger number of assets than the Earth can economically give, the less capable the Earth can take care of human demand later on. We are aware of the fact about the depletion of non-renewable resources such as fossil fuels, metals, and minerals that make a higher standard of living possible on Earth. Throughout the history of Earth, microbes have radically reshaped life on the planet, from creating the air we breathe to wiping out almost all life on Earth. A method of mass producing energy might be the innovative fact that a few specific bacteria even under high temperature and high CO2 concentration, which is the present scenario, can produce compounds which can be further synthesized to create an alternative means of clean fuel. Further with the help of DNA mutation the rate of production and its efficiency can be multiplied multi folds. A means of creating the perfect working conditions for these bacteria is easier and more effective than artificially generating alternative fuels in our own homes by using the waste food produce which will generate electricity.

Keywords—

Microbial Fuel Cell; Renewable Sources; Sustainable energy; Energy Production

Data Analytics in Healthcare: A Survey

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Abstract:--

The healthcare industry at present generates great amount of data starting with reporting of patient related data , health and medical devices related data, drug research data, health insurance data, clinical outcome data, laboratory data, images with graphic, audio, video data, health policy data and patient's feedback data. This generated data is both structured and unstructured. In today's digital era, it is mandatory that these data is digitized . The digitization of healthcare data in return will help providing enhanced quality of care, with reduced healthcare cost.With information in digital form, healthcare organizations can use available tools and technologies to analyze that information and generate valuable insights in treating. We took diseases like Hytertension, Diabetes, Dengue and Malaria , Pneumonia and made data analytics on these.Data analysis which helps in improving the decision making and to cater enhance solution for diseases.