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APS
College of Engineering

International Conference on

Frontiers in Engineering, Management and Science

(ICFEMS-2022)

Virtual Conference

27th & 28th April 2022

Organized By

A P S college of Engineering, "Anantha Gnana Gangothri" Campus, Somanahalli, Kanakapura Road, Bangalore –560082

In Association with

Institute for Engineering Research and Publication (IFERP)

Rudra Bhanu Satpathy
Founder & Chief Executive Officer
Institute For Engineering Research and Publication.

On behalf of **Institute For Engineering Research and Publications (IFERP)** and in association with **A P S college of Engineering, Karnataka, India**. I am delighted to welcome all the delegates and participants around the globe to A P S college of Engineering, Karnataka,India In Association with for the **"International Conference on Frontiers in Engineering, Management and Science (ICFEMS-22)"** Which will take place from **27th & 28th April 2022**

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 & APSCE) 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 for their virtual presence.

Sincerely,

Rudra Bhanu Satpathy

PREFACE

The **International Conference on Frontiers in Engineering, Management and Science (ICFEMS-2022)** is being organized by **A P S college of Engineering, Karnataka, India** in Association with **IFERP-Institute For Engineering Research and Publication** on the 27th – 28th April, 2022.

The **"International Conference on Frontiers in Engineering, Management and Science"** was a notable event which brings Academia, Researchers, Engineers, Industry experts and Students together.

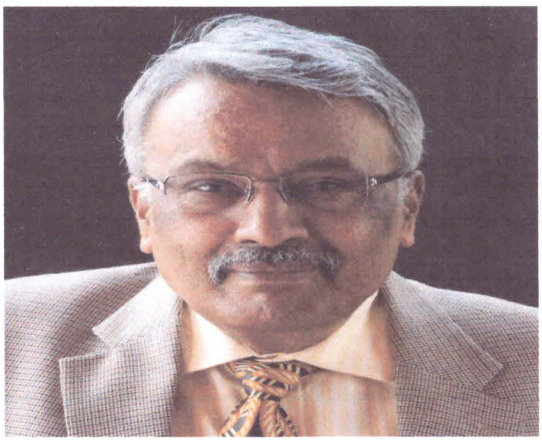
The purpose of this conference is to discuss applications and development in area of "E**ngineering, Management and Science**" which were given International values by **Institute For Engineering Research and Publication (IFERP)**.

The International Conference attracted over 120 submissions. Through rigorous peer reviews 74 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.

ICFEMS - 22

President's Message



Greetings..

A P S College of Engineering has a track record of good percentage of results through meritorious students. The Management and the Faculty of the College are aware that proper and strong foundation has to be laid for the development of students to be potential citizens of this great country. Every effort is made to excel in academics, research, co-curricular and extra-curricular activities which help to create a vibrant and dynamic learning environment.

I believe that this International conference will become a good platform to present research articles of the faculty and students. We look forward for a relationship, where the learning quotient rises above the mere imparting of Academics knowledge towards providing education with excellence, values, morals and skills. We strongly believe in education with humanity.

Wishing all the best..

Prof. Narasimha Murthy K P
President, APSET

Vice -President's Message

Warm greetings…

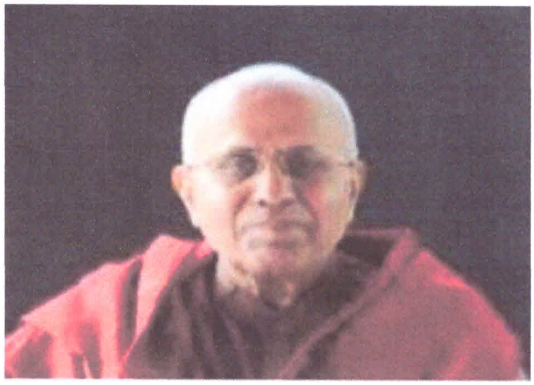
Technology is required to solve the challenges existing in the society in a smart way. I am happy to hear that APSCE is organizing International conference to meet researchers and exchange their views. Look forward for many more such events in future.

With best wishes

Dr. CA Vishnu Bharath Alampalli

Vice- President, APSET

Vice – President's Message



Hearty Wishes…

APSCE is celebrating Silver jubilee in 2022, since inception the institution is known for good academic culture. It is a good time to celebrate the same through these kinds of activities such as Multidisciplinary International conference. Conducting such events regularly be a good practice. I wish all the best and will take the institution to further heights.

With best wishes

K. Mohan Dev Alva.

Sri. K Mohan Dev Alva
Vice- President, APSET

General Secretary's Message

Hearty Greetings …

A warm welcome to A P S College of Engineering (APSCE). It is one of the premier institutions in Bengaluru run under the aegis of A P S Educational Trust, which was established during 1935. The A P S College of Engineering was established during 1997 and imparting technical education to various sectors of the society. The Institution has five branches in Bachelor of Engineering – UG and five research Centers, recognized under VTU leading to Doctoral degrees. A P S College of Engineering has been instrumental in developing such workforce for the development of the nation.

I am very much happy to hear APSCE is organizing International conference on various Engineering topics. I wish all the students and academicians to make use of the opportunity towards updating technical knowledge.

My best wishes to all the concerned..

Sri. A R Acharya
General Secretary, APSET

Principal's Message

Hearty Welcome to Green Campus

Change is the only constant that is happening in the world. World is changing fast due to fast advancement of technology. As such we should be on our toes for the change expected in these modern days. Government of India at the center and Government of Karnataka are adopting latest curriculum in engineering colleges. National Education Policy-2020 (NEP) is one such program happening to bring lot of changes in the field education in general and Engineering in particular.

As a part of NEP, APSCE is organising Multidisciplinary International Conference on Frontiers in Engineering, Management and Science. I congratulate Internal Quality Assurance Cell (IQAC) for the same. Good to hear that the quality papers are received in various domains. I wish for fruitful interactions during presentations and pleasure to be a part of the conference.

Warm regards

A. G. Nataraj

Dr. A G Nataraj
Principal, APSCE

Convener's Report

Warm greetings…

The core motive of conducting conferences is to exchange the raw research work with all the concerned and interested. Primarily, the concerned authors are explored with many other possibilities of improvising their work through reviewer's comments and also provide a platform to connect with people working in related domains. The ICFEMS-2022 is a multidisciplinary conference with papers from many other countries. I personally feel proud to receive diversified articles to mean that the topics are "**Not limited to**". We have totally received one hundred and fifty (150) papers, out of which eighty eight (88) were accepted and Seventy four (74) Abstracts are registered.

The takeaways of each individual involved in the process is an experience and updated knowledge of recent developments in various areas of Engineering, Science and Management. The purpose is served, if the same knowledge is spread to as many people towards solving issues of our society.

I would like to thank our Management and Principal for permitting towards conducting the conference. APSCE would like to thank IFERP, Chennai for the support and cooperation rendered during the conduction of the conference. I would like to thank all HOD's, staff and authors involved directly and indirectly towards successful conduction of the conference.

Regards

Dr. Jagadeesh H S

Convener, ICFEMS - 2022

Keynote Message for ICFEMS - 22

Dr Shrihari Honwad
President
Sir Padampat Singhania University,
Bhatewar, Udaipur 313601

It is indeed my pleasure to join the organisers in welcoming all the delegates, plenary speakers, presenters to this International Conference on Frontiers in Engineering, Management and Science" ICFEMS-2022) to be held on 27th-28th April 2022 at A P S college of Engineering, Karnataka, India (EITS) with Institute For Engineering Research and Publication (IFERP), Chennai.
A conference is an opportunity to network with peers and superiors in the profession and to build a professional pride. It is also a great opportunity to learn how the peer group is thinking and compare notes with them. This is not only a learning opportunity but also a place to competitively test your contributions with the best in the profession. Most importantly, this is the time to get away from your daily tedious routine on a holiday and have some fun. I am sure this conference will create ample scope for all the ideas I have floated above and in addition, be a place for cultural and multi-ethnic exchanges and interactions.

I wish the conference every success and all of you a wonderful time.

Keynote Message for ICFEMS - 22

Prof. (Dr) Krishna Gadasandula
Dept.of Accounting and Finance- College of Business and Economics
Debre Tabor University – Ethiopia (Horn of Africa)

Doctorate Holder of Business Management (Finance) From Osmania University –Hyderabad –India, 20 years of Teaching and Research experience with various countries like, Maldives, India, and Ethiopia.

Ladies and Gentlemen,

It gives me great pleasure to be with you in this incredible event - International Conference on Frontiers in Engineering, Management and Science (ICFEMS-2022) to be held on 27th and 28th April 2022, Organized by APS college of Engineering-Karnataka- In association with Institute for Engineering Research and Publication (IFERP).

On behalf of the APS College, IFERP and Debre Tabor University, I may extend a very warm welcome to all participants in this Conference

Any conference is designed to debate current and developing challenges in a specific educational topic while also raising awareness among other researchers and scholars. In the fields of education and multidisciplinary technologies and applications, we have seen significant advancements. We need appropriate platforms, such as these conferences, to meet these anticipated advancements.

The Globe is moving from New Normal to Never normal situations, while there is no way to tell exactly what the economic damage from the global COVID-19 corona virus pandemic will be, there is widespread agreement among economists that it will have severe negative impacts on the global economy.

I am confident that the International Conference on Frontiers in Engineering, Management, and Science (ICFEMS-2022) will establish itself as the premier international event, showcasing the most cutting-edge multidisciplinary and educational innovations to find answers to unreciprocated questions of many.

Thank you Very Much – Wish you good Luck!!

International Conference on

Frontiers in Engineering, Management and Science

(ICFEMS-2022)

Virtual Conference, 27th & 28th April 2022

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CONTENTS

CONTENTS

CONTENTS

CONTENTS

International Conference on

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ABSTRACTS

Organized By

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International Conference on
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ICF-EMS
27th & 28th April 2022

Rectennas for Energy Harvesting systems and Wireless Power Transfer: A Review

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Abstract: Energy harvesting (also known as energy scavenging) is the conversion of ambient energy present in the environment into electrical energy for use in powering autonomous electronic devices or circuits. In this article, rectenna design which had been designed using antenna and rectifier is reviewed which had been used for energy harvesting systems,which is applicable for low power devices. Radio-frequency (RF) energy harvesting (RFEH) and wireless power transfer (WPT) have attracted significant interest as methods of enabling battery-free sustainable wireless networks. Energy harvesting, the collection of small amounts of ambient energy to power wireless devices, is a very promising technology for applications where batteries are impractical.So, in this article the reported rectennas is studied based on the different electromagnetic characteristics.So, in this paper, the rectennas which is designed for low power applications, is studied which makes use of different techniques and scientific methods to implement. This survey provides the facts of rectennas which operates in different range of frequencies which yield the results for different electromagnetic characteristics like frequency,gain,efficiency,directivity and the tabular results is provided for the same.

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Students' Anxiety and Language Proficiency

MARY SHANE LOUIE MARTIN-SAYSON
The Faculty of the Graduate School, Rizal Memorial Colleges, Davao City

Abstract : This study was designed to explore the relationship between the students' anxiety and language proficiency in second language learning. This study was conducted at Agro-Industrial Foundation College of the Philippines. The respondents of the study were two hundred ninety eight first year college students. The research used the non-experimental quantitative research design using the question. One questionnaire was administered to the respondents to collect the data. The questionnaire was the translation of Language Anxiety in International Students: Humphries, Rebecca (2011) and Sources of Students' English Writing Anxiety Horwitz et al. (1986). This study goes to show that these difficulties can be resolved given an awareness of the theoretical perspective from which this research has developed. The analysis of the study was done with the help of respondents. Mean, standard deviation, Pearson r and regression analysis were employed in the analysis of the data gathered in this study. It is revealed in the study that the students' anxiety in terms of apprehension, fear of negative evaluation, and test of anxiety is of high level, while the language proficiency in second language learning in terms of areas of comprehension, reading, speaking and vocabulary is moderately descriptive equivalent. It is also revealed that there is relationship between students' anxiety and language proficiency in second language learning.

Keywords: Student' Anxiety and Language Proficiency in Second Language Learning

International Conference on
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ICF-EMS
27th & 28th April 2022

Design Analysis of a 3.2 kW Wireless Battery Charger for an Electric Vehicle

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Abstract: With the increasing fuel prices Electric vehicles (EV) are steadily replacing internal combustion engine-based vehicles. To sustain this trend toward electric vehicles it is imperative to facilitate charging infrastructure either through plug in or wireless charging. The limitations of plug-in charging like safety hazards involved in plug in and plug out of cable, wear and tear of power cables, leaving vehicles idle for around 90 minutes forces us to shift towards wireless vehicle charging. In wireless power charging power can also be transferred while the vehicle is moving thus reducing the idle time of vehicle. However, efficiency at high power transmission is the major limitation in adopting wireless charging of electric vehicles. This paper focuses on the design of a high-frequency inverter for high-power wireless power transfer. The power considered for power transfer is 3.2 kW. Coil design is done in Maxwell Ansys software and as per the inductance value obtained, the coil is fabricated. The frequency, as well as mutual inductance, is also optimized on MATLAB for maximum efficiency. Series compensation is being used for maximum power transfer between the primary and secondary coils. In this paper aspects covered are coil design parameters, selection of compensation circuit, selection of frequency, and mutual inductance and simulated on Matlab and Maxwell Ansys software.

Index Terms: Electrical vehicle, High power, Resonance, Wireless charger.

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Structural Modification and Composite Material of Horizontal Tail of a Microlight Aircraft

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Abstract : The paper deals how a weight of the horizontal tail (HT) of microlight aircraft is reduced from structural modification and composite material. And comparing the results for base model material aluminium alloy 2024 and structural modified model are performed such as thickness and material Composite (Epoxy Carbon-Woven matrix). And also addresses, static, dynamic and stability characterization of horizontal tail (HT) of a microlight aircraft through numerical simulation using CAE tools HyperMesh and MSC Nastran. From this it's able to reduce weight 32% from the baseline modal. Static characterization of HT has been performed for critical flight manoeuvres: symmetrical, unsymmetrical manoeuvres and gust encounter. Linear buckling analysis has been performed to check stability of skin panel under various flight operation. Dynamic characterization of horizontal tail is performed to study response of the structure to dynamic loads. In addition, response to the gust encounters also has been studied for the finalization of design. Direct transient analysis of HT subjected to gust encounter has been carried out. And Normal mode analysis has been carried out to establish natural frequencies and associated mode shapes that HT structure can exhibit.

Keywords: Aluminium alloy, composite, horizontal tail, Microlight, structural modification.

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Frontiers in Engineering, Management and Science
27th & 28th April 2022
ICF-EMS

SIGN LANGUAGE ALPHABET RECOGNITION BASED ON DEPTH IMAGE AND PCANet

[1]Kavyashree K.S, [2]Prajwal N, [3]Sneha G, [4]Tanushree H.C, [5]Asst. Prof Shruthi B.S
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Abstract: Conversation with people having a hearing disability is a major challenge. Deaf and Mute people use hand gesture sign language to communicate, hence normal people face problems in recognizing their language by signs made. Hence there is a need for systems that recognize the different signs and conveys the information to normal people.

In this project, a new signer independent finger spelling recognition method is proposed based on learning features from depth image using Convolutional Neural Network (CNN).

Extracted high-level features from CNN can efficiently represent the shape of hand gestures more robustly than that of hand-crafted features. The overwhelming success of convolutional neural network models and deep leaning algorithms motivates many researchers to apply them in sign language recognition problems. However, the complex structure of recent CNN architectures and the high computational cost of training prevent their utilization in real-time applications. Motivated by the successful achievements of PCANet deep learning architecture in many object recognition problems, our proposed method employs this model to automatically learn depth features from the segmented hand regions.

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Retinitis detection using convolution neural networks

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Abstract : Retinitis is the Genetic problem, is inflammation of the retina in the eye, which can permanently damage the retina and lead to blindness .To such damage over come this issue, An efficient detection Retinitis ,detecting the visibility can be recognized by using Convolution neural networks , K-nearest Algorithm , because the human eyes locations are essential information for medical diagnosis. we are conclusive to effectively detect the part of Eye where the patient have visual gets magnified, and part of object gets magnified to half / bi-lateral vision, using several algorithm the goal of writing this paper is all about to get the half part to help the representative Class object get help from this approach

International Conference on
Frontiers in Engineering, Management and Science
ICF-EMS
27th & 28th April 2022

Differential Evolution Algorithm: Application in Optimization to Engineering Problems

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Abstract: Differential Evolution (DE) is optimization technique inspired by nature based non-conventional evolution. DE's exceptional accuracy at numerical optimization, faster convergence & its independence on initial and final constraints defines its value for providing excellent solution set. DE algorithm is nature based and includes four important factors - generation, mutation, crossover and population. It provides solution for wide set of optimization problems with equality or inequality constraints regardless of stability and dimension of problem.

This work systematically implemented DE Algorithm for solving two benchmark problems from literature and frequently used by researchers in this field. The solution by DE and conventional method have been compared to check the effectiveness of DE. It is found that DE is robust, simple to implement and converges faster towards global optima than other conventional methods.

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ICF-EMS
27th & 28th April 2022

Pneumoniapredictionusing Chestx-Ray Image Machine Learning

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Abstract: Artificial intelligence has proven to be an effective way in the detection of many diseases. This study presents a survey of artificial intelligence techniques used in the detection, classification and visualization of pneumonia disease in lungs using radiographs of chest. In this review, different reliable databases were searched including research gate, ELSEVIER, Applied sciences and IEEE. Pneumoniaisafatal sort of malady on the off chance that we truly couldn't careless.If we don't diagnoseit initsearlystagesitcanberesponsiblefor50000deathseveryyear.

There are two kinds of pneumonia: viral and bacterial. Many researchers have done their research for the identification of pneumonia using machine learning and deep learning methods. This study gives you an overview of the machine and deep learningmethodsproposedpreviouslyforthepneumoniadetection.

This paper describes the use of machine learning algorithms to process chest X-ray images in order to support the decision making processindetermining the correct diagnosis. Specifically, theresearch isfocused onthe useof deeplearning algorithm based on convolutional neural network in order to build a processing model. This model has the task to help with a classificationproblem that isdetectingwhether a chest X-ray showschangesconsistent withpneumonia or not,andclassifying the X-ray images in two groups depending on the detection resultsThe main objective is to find the limitations of the previous studies and suggestions for the future work

International Conference on
Frontiers in Engineering, Management and Science
ICF-EMS
27th & 28th April 2022

Potato Disease Classification Using Convolutional Neural Networks (CNN)

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Abstracts: Potatoes are a well-known vegetable that we are all familiar with. When other countries are taken into account, it is easy to conclude that potatoes are the world's most popular vegetable, as several agricultural departments have increasingly asserted. Potato leaf disease, despite the hoopla, does severe harm to potatoes. Various diseases, such as early blight, late blight, septoria blight, and others, affect potato plants and display their symptoms in the leaf. If these outbreaks are recognised early enough and appropriate intervention is taken, the farmer will not suffer significant financial losses. On the basis of image processing technologies, the suggested model would effectively identify and detect illnesses of potato leaf stands.

Machine Learning contains a variety of algorithms, however in this study, the CNN model was employed to detect the disease from photos of the potato leaf because CNN is utilized for image classification and produces the best results. For this study, three algorithms are used, VggNet, ResNet, and Inception are the three networks. To distinguish between normal and abnormal characteristics of potato leaves, the model offered uses healthy and disorder-affected leaves. These photos are then examined using the given algorithm, and the potato plant leaf is identified as infected or normal.

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International Conference on
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ICF-EMS
27th & 28th April 2022

Machine Learning for Clinical Decision Making for Cardiovascular Disease

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Abstract: The use of Machine Learning (ML) approaches to target clinical problems is called to revolutionize clinical decision-making. The success of these tools is subjected to the understanding of the intrinsic processes being used during the classical pathway by which clinicians make decisions. In a parallelism with this pathway, ML can have an impact at four levels: for data acquisition, predominantly by extracting standardized, high- quality information with the smallest possible learning curve; for feature extraction, by discharging healthcare practitioners from performing tedious measurements on raw data; for interpretation, by digesting complex, heterogeneous data in order to augment the understanding of the patient status; and for decision support, by leveraging the previous step to predict clinical outcomes, response to treatment or to recommend a specific intervention.
Heart disease is one of the most significant causes of mortality in the world today. Prediction of cardiovascular disease is a clinical challenge in the area of clinical data analysis. The main purpose of this project is to find the best and most suitable algorithm for prediction and diagnosis of diseases and application of machine learning for healthcare systems. The algorithm used in our project is K-Nearest Neighbor (KNN) and Random Forest algorithms. In this work we attempted to predict Cardiovascular disease using Hybrid machine learning algorithms which might provide the highest accuracy of 87.67% efficiency.

Keywords: Machine learning; clinical decision-making; cardiovascular disease; K-Nearest Neighbor (KNN); Random Fores

International Conference on
Frontiers in Engineering, Management and Science
ICF-EMS
27th & 28th April 2022

A Comparative Study Of Big Mart Sales Prediction Using Machine Learning Algorithms

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Abstract: Nowadays shopping malls and Big Marts keep the track of their sales data of each and every individual item for predicting future demand of the customer and update the inventory management as well. These data stores basically contain a large number of customer data and individual item attributes in a data warehouse. Further, anomalies and frequent patterns are detected by mining the data store from the data warehouse. The resultant data can be used for predicting future sales volume with the help of different machine learning techniques for the retailers like Big Mart. However, machine learning has grown to be an important area of data science that has gained ground due to its high predictive and forecasting powers and as such as become the go-to for highly accurate sales forecasting as well as other important areas. Many supermarkets today do not have a good forecast of their yearly sales. This is mostly due to the lack of skills, resources and knowledge to make sales estimation.
In this paper, we propose a predictive model using K- Nearest Neighbours technique and Naive Bayes for predicting the sales of a company like Big Mart and found that the model produces better performance as compared to existing models. The objective is to get proper results for predicting the future sales or demands of a firm by applying techniques like Clustering Models and measures for sales predictions. By this survey it is concluded that the prediction algorithms are playing a key role in increasing profit of retail shops by providing information about products to be stocked and or products not be stocked.

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Predictive Analysis for Big Mart Sales Using Machine Learning Algorithms

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Abstract: The goal of every supermarket is to make profit. This is achieved when more goods are sold and the turnover is high. Machine Learning is transforming every walk of life and has become a major contributor in real world scenarios. Major transformations can be seen in the domain of sales and marketing as a result of Machine Learning advancements.
The objective here is to envisage the pattern of sales and the quantities of the products to be sold based on some key features gathered from the raw data we have. Analysis and exploration of the collected data has also been done to gain a complete insight of the data. Analysis would help the business organizations to make a probabilistic decision at each important stage of marketing strategy. A comprehensive methodology of sales prediction is going to be done using Machine Learning models such as Linear Regression, Polynomial regression, Ridge classifier, XG Boost Regressor and Random Forest Regressor. Big Mart, a one-stop-shopping-center is going to be used to predict the sales of different types of items and for understanding the effects of different factors on the item's sales. Taking various aspects of a dataset collected for Big Mart, and the methodology followed for building a predictive model, results with high levels of accuracy are to be generated, and these observations can be employed to take decisions to improve sales.

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Bitcoin –The Digital Currency

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Abstract: Bitcoin is one of the most successful cryptocurrencies in the recent times, attracting a considerable number of investors. In the present market, Bitcoin is worth close to 1.03 trillion of dollars. It was first introduced by an individual (or a group of people) named Satoshi Nakamoto whose identity is still unknown. He implemented the Bitcoin software as open-source software in January 2009. Bitcoin is a peer-to-peer (P2P) technology which is a decentralized worldwide payment system where transactions take place among users without any single administrator or bank. Bitcoin transactions are performed and verified by network nodes and then registered in a public ledger called blockchain, which is maintained by network entities running Bitcoin software. As all the computers running on the blockchain have the same list of blocks and transactions; it transparently shows the new blocks as they are filled with new Bitcoin transactions, hence no one can cheat the system. It can be exchanged for other currencies, products and services.
In this survey paper, we present detailed study on evolution of the Bitcoin and its Infrastructure (blockchain). Last, we brief about the threats and future of Bitcoin.

Keywords: Bitcoin; Cryptocurrency; Digital Currency; Blockchain;

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Video To Text Summarization Using Neural Network

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Abstract: This paper proposes a novel method for video scene classification with the particular intention of video summarization. Creating and publishing a shorter version of the video is more interesting than a full version due to instant entertainment. Generating shorter summaries of the videos is a tedious task that requires significant labor hours and unnecessary machine occupation. Due to the growing demand for video summarization in marketing, advertising agencies, awareness videos, documentaries, and other interest groups, researchers are continuously proposing automation frameworks and novel schemes. Since the scene classification is a fundamental component of video summarization and video analysis, the quality of scene classification is particularly important. This article focuses on various practical implementation gaps over the existing techniques and presents a method to achieve high-quality to scene classification. We employ our model using pre-trained AlexNet Convolutional Neural Network (CNN) for scene classification. The proposed method employs new, fully connected layers in an encoder fashion. We employ data augmentation to achieve a high accuracy of 99.26% over a smaller dataset. We conduct a performance comparison against baseline approaches to prove the superiority of the method as well as state-of-the-art models. We evaluate our performance results on videos and compare various deep-learning models, i.e., Inception V3, Visual Geometry Group (VGGNet16, VGGNet19), Residual Network (ResNet50), and AlexNet. Our experiments demonstrate that our method with AlexNet CNN produces better results than existing proposals.

Keywords: Neural Network; AlexNet Convolutional Neural Network; Deep-learning Models;

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Diabetes Prediction System Using Machine Learning

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Abstract: Diabetes Mellitus is a life-threatening disease and many people are suffering from it. According to International Diabetes Federation, 382 million people are living with diabetes across the whole world. Some of the causes of diabetes are age, obesity, lack of exercise, etc. As there is no permanent cure for diabetes, early detection, and necessary treatment are the only ways to control it. This paper proposes a machine learning approach for prediction, early-stage identification, and classification of diabetes. Currently, hospitals collect the required data for diabetes diagnosis through various tests, and treatment is provided based on this data. In this existing method, the accuracy is not so high. The Prima Indian Diabetes Dataset has been used in this study, provided by the UCI Machine Learning Repository. The dataset is originally collected from the National Institute of Diabetes and Digestive and Kidney Diseases. The dataset consists of some medical distinct variables, such as pregnancy record, BMI, insulin level, age, glucose concentration, diastolic blood pressure, triceps skinfold thickness, diabetes pedigree function, etc. Classification accuracy can be increased if we use much of the data set for training and few data sets for testing. This survey has analyzed various classification techniques for the classification of diabetic and non-diabetic data. Thus, it is observed that techniques like Support Vector Machine, Logistic Regression, and Artificial Neural Network are most suitable for implementing the Diabetes prediction system. Machine learning has the great ability to revolutionize the diabetes risk prediction with the help of advanced computational methods and the availability of a large amount of epidemiological and genetic diabetes risk dataset. Detection of diabetes in its early stages is the key to treatment. This work has described a machine learning approach to predicting diabetes levels. The technique may also help researchers to develop an accurate and effective tool that will reach the table of clinicians to help them make a better decision about the disease status.

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Role of pre-employment stage of psychological contract in enhancing employability of job seekers

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Abstract: The concept of Psychological contract has received significant attention from the researchers worldwide in the past few years. However, it is important to note that most of the researches have focused on formation and breach of psychological contracts in work place. The foundation for the formation of a psychological contract lies in the pre-employment stage, which requires more research.
This paper aims to study the importance of pre-employment stage of psychological contract and the role it plays in enhancing the employability of job seeking aspirants and hence the study is confirmatory in nature. The data required for the study was collected from both primary and secondary sources. A pilot tested questionnaire was used to gather primary data. 246 UG and PG students were chosen as respondents based on convenience sampling technique. Various journals, online articles, newspaper articles were referred to obtain secondary data. Further, data was analyzed on SPSS tool using suitable statistical techniques.
The results showed that pre-employment stage of psychological contract plays a significant role in enhancing employability which is expressed in the form of two factors, learnability and flexibility. However, the study is limited only to data collected from commerce and management students. With data from diversified educational background the results would be more significant.

Key words: Psychological contract, employability, learnability, flexibility, pre-employment stage

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A systematic Air Quality Analysis for Air pollution control in india through Calibration and Machine learning algorithm

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Abstract: Air pollution is caused by a number of pollutants, which include both solid and liquid particles suspended in the air (particulate matter (PM)), and various gases such as ozone (O3), nitrogen oxides (NO2 or NOx), volatile organic compounds (VOCs), and carbon monoxide (CO) etc. PM10 Particulate Matter is a priority pollutant internationally due to their adverse effects on public health as well as its negative effects on sensitive ecosystems, materials, and climate.PM2.5 is responsible for a variety of health effects including effects on the respiratory and cardiovascular systems, asthma, and premature death. NO2 can affect the respiratory system causing inflammation of the airways. People with asthma or respiratory diseases are particularly sensitive and can show effects at low concentrations. SO2 causes constriction of the airways leading to breathing difficulties, particularly in those suffering from asthma and chronic lung disease. The main threat to human health from CO is the formation of carboxyhemoglobin in the blood, which substantially reduces the uptake and transport of oxygen in the body. VOCs can have a variety of health effects. Some species are directly toxic to humans and some produce offensive odors at very low concentrations. Human health is harmed by long-term exposure to particulate matter (PM) with aerodynamic dimensions of 10 (PM10) and 2.5 m (PM2:5). Despite the fact that station-based PM monitoring has been carried out all over the world, providing spatially continuous PM information over large areas at high spatial resolution remains a challenge. Aerosol optical depth (AOD), a satellite-derived metric has been widely utilized to analyze ground-level PM concentrations. To estimate surface PM concentrations over India, we combined multiple satellite-derived products, including AOD, with model-based meteorological parameters (such as dew-point temperature, wind speed, surface pressure, planetary boundary layer height, and relative humidity) and emission parameters (such as NO, NH3, SO2, primary organic aerosol (POA), and HCHO). Both were estimated using random forest (RF) machine learning.

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Neuber's rule studies to get localized stress and strain for linear FE analysis

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Abstract: In order to analyze the material non-linearity behavior of the notched components and to reduce the computational time, here Neuber's rule is adopted. Neuber's method corrects the elastic results to capture plasticity results i.e. localized stress and localized strain. The Ramber'g-Osgood equation were taken into consideration in order to retrieve plasticity results. To study the Neuber's rule, three different notched CAD models were generated using CATIA software; wherein these models were assigned with Aluminum 7075-T6 and AISI 1090 Steel materials along this entire research work. These FE models were subjected to monotonic tensile loading by using ANSYS Workbench. Initially, linear analysis was performed for the aforementioned models; using the data obtained from these linear analyses, plasticity results were extracted. Validation of these extracted plasticity results were done using multilinear analysis as reference. Comparison of Neuber's rule data and multilinear analysis data were plotted across. It was found that merely five percent error were observed. This justifies that Neuber's rule holds good to obtain localized stress and localized strain of the components.

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Design and study of WDM based ROF system with dispersion compensation

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Abstract : Today's data transmission applications require high bandwidth, minimum BER (Bit Error Rate) and low latency. WDM (Wavelength Division Multiplexing) over RoF (Radio over Fiber) system is considered to be one of the most efficient technologies for the forth coming generation. The proposed design consists of 20-channels WDM over RoF system operating at a data rate of 10 Gbps with a carrier frequency of 100 GHz. The analysis is done along with the Dispersion Compensation and Fiber Bragg Grating over a length of 100 Km. Performances parameters such as bit error rate (BER), quality factor (Q-factor), and eye diagrams are simulated and compared with the existing systems.

Keywords : WDM, RoF, Dispersion compensation, Fiber Bragg Grating, BER, Q-factor and eye diagram

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Performance Analysis of Distance vector and Linked state Routing Protocol using NS-2.35 Environment.

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Abstract: Routing and network topology are very important to transmit the data packets from source to destination .A set of operations are performed by network layer that regulates the flow of traffic for effective and efficient communication. One of the functionalities of router is to deliver packets to destination with best effort which is achieved using Routing protocols. Hence Routing protocol (Routing algorithm) gives best and least cost path for communication. In this paper performance of Distance vector protocol over Linked state routing protocol is analyzed using simulation environment NS-2.35.Receiving Throughput, Average packet delay, Dropped rates and number of packets lost are estimated using NS-2.35.

Keywords: Routing linked state routing protocol, Distance vector protocol, NS-2.35.

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Finite Element Analysis of Wing-Fuselage Lug Attachment Bracket of the Fighter Aircraft.

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Abstract: The intense number of maneuvers across fighter jets will obviously result in enormous magnitude of loads along the topology of the aircrafts skeletal structures. If these loads are not taken care, it shall eventually lead to unprecedented failure in mechanical components. Among these delicate parts lug brackets and I-spar beam are among the vital structural aspects which links between fuselage and wing of the aircraft. It is estimated that '6g' forces act upon the wingspans under tight maneuverers. In this research work, the lug bracket cum I-bar beam assembly is modelled upon with thickness of 10mm (Ideal Model) via CATIA V5; later the FE model enclosing 2D elements were prepared with varying thickness modelled of 9mm and 8mmm accordingly. Wherein, using ANSYS APDL the structural analysis with fatigue calculation via damage accumulation was carried out to. Upon post analysis results, it is justified that 9mm model sustains the abusive structural tests and 8mm model utterly fails when compared to ideal model. Thus, this reduction in 1mm thickness along the assembled model shall abruptly reduce 7.2kg from the ideal model.

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Study of Hybrid Annuity Model in Maharashtra Samruddhi Mahamarg

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Abstract: Recent introduction of Hybrid Annuity Model (HAM) for highway up gradation projects in India marks a significant policy departure. This is aimed at revitalizing private sector led infrastructure development. Numerous ills plaguing the highway sector, which had led to a record fall in the award of new projects, both in numbers and value. Taking a dispassionate look, this paper critically examines the extent to which HAM has fulfilled its stated objectives during its introductory stage. The analysis of project award data provides mixed empirical evidence of HAM's initial success. We find that as a development imperative, HAM does encourage private participation in highway infrastructure, and its a step forward. However, HAM also suffers from extensive de-risking of the private sector, to the extent of making them unattractive for debt, equity investment. By this, HAM takes the re-engagement of private sector two steps back. We concede that HAM is still in its infancy and a true performance would only be evident once enough number of projects have been delivered through this model. This is important as infrastructure projects have a long-life cycle, and an early-stage dispassionate analysis and course correction is necessary, lets we move too far down the wrong path.
Keywords: HAM, Road development, Financial model.

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Engineering, Analysis, Concept Realisation and Working Prototype of Mobile Renewable Energy Power for Defence Forces deployed in Forward/ Operational Areas

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Abstract: Climate change poses serious threats to national and global security. Our country recognised the global and security implications of climate change as far back as 2010 when National Solar Mission was launched. Indian Defence Forces under the aegis of Ministry of Defence (MoD) with an aim to support the Government of India (GoI) has participated actively in this mission and have commissioned many solar power plants from last ten years.

The military is also interested in renewable energy as part of an overall effort to reduce dependence on foreign oil and the global supply chains it necessitates. The defence forces are heavily deployed in High Altitude Areas and Desert Areas, which are deprived of commercial power supply. Thus defence forces are heavily dependent on generator sets based on fossil fuels. This results in heavy consumption of fossil fuels such as Kerosene and Diesel by the Defence Forces. This not only results in heavy consumption of Defence Budget but also requires complex logistic supply chains which are always vulnerable. And the areas where the military has the conventional grid supply, their access to could be threatened by cyber attacks, electromagnetic pulses, simple human error or various natural calamities such as earthquakes, floods or avalanches. Military in order to overcome above security threats has already commissioned and are in a process of commissioning various solar power plants in various military cantonments.

However, such solar power plants don't provide solution to defence forces deployed in forward areas/ operational areas/remote areas/temporary locations. Such locations are completely dependent on Diesel Generators resulting in heavy consumption of fossil fuels thus resulting in heavy expenditure of defence budget alongwith climatic hazards and complex supply chain requirements. A renewable power plant, mobile in nature can be a promising solution to the problem. The present work carries out engineering and detailed analysis of various types of renewable solar PV panels and technologies. On the basis of this study a concept realisation is carried out so as to develop a working prototype of Mobile Renewable Energy Power system with adequate battery based storage for defence forces deployed in forward areas/ operational areas/remote areas/temporary locations so as to make the defence forces independent of diesel based generator sets, thus removing the dependency on fossil fuels.

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Physical and Mechanical Method as a Green Approach of Cell-Lysis to Release Intracellular Polyhydroxyalkanoates from Bacillus Sp

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Abstract: As a potential alternative to conventional plastics, polyhydroxyalkanoates (PHAs) are flourishing globally for being bio-based, highly degradable and biocompatible. Poly(3-hydroxybutyrate) (PHB) is commonly known PHAs, possessing properties like conventional plastics such as polypropylene (PP). Concerning extraction, "green approach" is emerging as forefront research area. Use of solvent is widely known mode of PHA extraction. To extract PHA from Bacillus sp. devoid of solvents, the current study used mechanical cell-disruption method that is traditional pestle and mortar, and sonication as a physical mode of cell-lysis. Different time intervals were set for grinding and sonicating, hence studying their effect on cell-lysis, to release PHA. The polymer yield was compared with standard sodium hypochlorite extraction. The polymer obtained was characterised by FTIR and 1HNMR. Till date, pestle and mortar was known to be applied in grinding plant cells only. By using it, the current study has accounted a novel method of cell-disruption to release PHA. Also, lysis buffer application during grinding as well sonicating has advanced the study. Therefore, promising a sustainable and economic method of PHA recovery.

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27th & 28th April 2022

Protection on Distributed Lines Terminals Due to Excessive Heating in Load Terminals Units

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Abstract: The paper is designed to develop a system to detect the synchronization failure of any external supply source to the power grid on sensing the abnormalities in frequency and voltage. There are so many power plants included in power generation units such as thermal power plants, hydro power plants, and nuclear power plants to supply power consumption to the load side areas. The Government policy is decided to supply power by applying various rules of the grid terminal. The government rules are mentioned to involve a voltage variation within prescribed limits and also maintain constant frequency so that the power consumptions can be carried out in proper manner. If any changes are applied in the power grid due to fault allocation or fault may occur in the prescribed manner another power grid should be disconnected from the main power grid unit. The problem of islanding is take place and may occur in some region black out to that regions. So the care should be taken because when excess of power has been utilised the power grid are going to unlimited changes i.e. change in the voltage and frequency. Therefore it is preferable to maintain the power grid in reverse capacity so that whenever we required power it can be provided to consumers terminals.

Keywords: Frequency, Voltage, Islanding, Arduino UNO Microcontroller, Power grid.

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Green Human Resource Management: A New Paradigm for Sustainable Development

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Abstracts: Green development across the world has brought forth the idea of Green Human Resource Management (GHRM), which helps in sustainable development. Today's organizations have to remain alert and adaptive to unforeseen events, such as external crises, which create increased uncertainty among their workforce and pose immediate threats to the organizations' performance and viability. However, with the present scenario, organizations suddenly have to navigate the unprecedented and thereby find new solutions to challenges arising across many areas of their operations. The grand challenges of today are diverse, involving a range of complex issues such as climate change, severe economic downturns and political instability. An extensive literature review was carried out to gather insights on prevalent green human resource activities and their link with sustainable organizational development. This study highlights status of green human resource practices such as environmental training, green recruitment, performance appraisal, employee involvement and compensation. The findings suggest that there is further scope to utilize the full potential of GHRM practices for inspiring pro-environmental performance in the organizations. This study provides a comprehensive literature review of green human resource management practices. It highlights gaps in the system and provides insights to managers and policy makers on building holistic sustainable organizations. Studies like these are more important in developing countries, which have alarming environmental concerns and poorly implemented government regulations.

Keywords : Green Human Resource Management, GHRM practices, Sustainable development.

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Implementation of ICT Tools in a Vocational Skill Development Program

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Abstract: Introduction - Skills and knowledge are the driving forces behind every country's economic and social progress. In the digital era, ICT materials such as PPT, Tutorial Videos, Animation, e-materials, and web resources are quite useful in the education sector for improved comprehension.
Aim of the study - To detect ICT skills among teacher who teach vocational skills in educational institutions. To determine the techniques and ICT technologies that will be used in the institutions to provide vocational skills. To get a better understanding of the issues that vocational skill providers confront, as well as the improvements and refinements that are necessary for the current system.
Research Methodology -The sample was chosen using a multistage random sampling process. This research looked at all of the skill-training institutes and centres in Dindigul's Taluks. For this study, a total of 250 vocational skill-providing teachers were chosen. The statistics package for social science (SPSS) was used to analyse the data.
Data analysis – The data collected have been analysed using frequency, percentage, graphs and statistics package for social science (SPSS) was used to analyse the data.
Conclusion - It is concluded that, 50.8 percent of respondents believe there is a poor amount of ICT-based reference resources for soft skill training. Simultaneously, the majority of respondents (88%) expressed an interest in receiving training in ICT-based occupational skill instruction. As a result, all occupational skill providers should get intensive ICT-based teaching and learning training. Institutions must create a suitable environment for ICT-based education.

Keywords: ICT, vocational training, education, skill, provider, learning, teaching problems, etc.

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Antibacterial and antifungal activities of Ag nanoparticles prepared by Artocarpus gomezianus fruit mediated facile green combustion method

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Abstract: The silver nanoparticles are utilized in the field of nanomedicine is keeping pace and improving with the regularly extending skyline of Nanobiotechnology. The present investigation manages the synthesis, characterization of silver nanoparticles and its antimicrobial action.Spherical Ag nanoparticles (Ag NPs) were synthesized by eco-friendly green combustion method using citrate containing Artocarpus gomezianus fruit extract as a fuel. The structure, morphology and compositions of the product were characterized by Powder X-ray Diffraction (PXRD), Scanning Electron Microscopy (SEM) and Fourier Transform Infrared (FTIR). The highly uniform spherical Ag NPs were subjected to antibacterial and antifungal activities. PXRD patterns demonstrate that the formed product belongs to crystalline face centered cubic structure of silver Nps. SEM micrographs show that the particles are uniform with well distributed elliptical/spherical particles with a size range from 5 to 50 nm with inter-particle distance. The average crystallite sizes were calculated from Scherrer's method are found to be ≈20 nm for Ag NPs prepared with 10, 15, 20 and 25 mL of 10% Artocarpus gomezianus fruit extract respectively. Micro titer plate method (96 wells) to check the Minimum Inhibition Concentration of Ag Nps, exhibit significant antibacterial activity against two gram positive organisms (Bacillus cereus, Staphylococcus aureus) and two gram negative organisms (Escherichia coli, Serratia marcescens). Zone of inhibition method shows the spherical Ag NPs also exhibit significant antifungal activity against Aspergillus niger. The synthesize Ag NPs finds plausible biological applications.

Keywords: Green synthesis; Ag nanoparticles; Antifungal; Antibacterial; Artocarpus gomezianus; XRD; SEM; FTIR

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Power Analysis of a FIR Filter in Biometric Systems For different adder's configuration

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Abstract: Power is one of the most important factors in any circuit along with area and delay. Circuit performance is a significant role while determining the efficiency of a circuit. Any VLSI circuit can be decomposed into smaller components such as multipliers, adders, shifters, flip-flops etc. The reduction of power, area, and delay parameters are increasing as the range of sophistication of applications in VLSI circuit designs. Adders and multipliers play a vital role in VLSI circuit designs to minimize the power consumed by the circuit. The Finite Impulse Response Filter is widely used in Digital Signal Processing Applications, such as speech processing, loudspeaker equalization, echo cancellation, noise cancellation, arithmetic computations and, image-processing applications. In FIR filter, the adders and multipliers are the important components to reduce the power, delay and area. Therefore, this proposed method faced with more constraints: as minimal power as possible. This work proposes a design of low power Finite Impulse Response Filter using Carry Skip Adder.The recent electronics industry uses digital filters for various real time applications.The decreases in power dissipation in any of these components can ultimately lead us to decrease in the power dissipation of overall circuit. Adders are one of the most basic yet important components of any circuit. In this paper, different types of adders are compared, their power dissipation is analysed using Cadence Virtuso 90GPDK.

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Analysis of Throughput and Energy Efficiency in the IEEE 802.11e Networks using Constant back off Window Algorithm

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Abstract: The IEEE has standardized the 802.11 protocol for Wireless Local Area Networks. The primary medium access control (MAC) technique of 802.11 is called distributed coordination function (DCF). DCF is a carrier sense multiple access with collision avoidance (CSMA/CA) scheme with binary exponential back off algorithm (BEB). DCF describes two techniques to employ for packet transmission: the two-way handshaking technique called basic access mechanism and an optional four-way handshaking technique, known as the request-to send/ clear-to-send (RTS/CTS) mechanism. A critical design parameter is the energy consumed to transmit bits across a wireless link in wireless networks is a critical design parameter. The Constant back off Window Algorithm (CWA) is the modification of the IEEE 802.11 BEB algorithm, which is used to control the contention window in the case of collisions, to provide a better Throughput and Energy efficiency. The new algorithm has been tested against the legacy IEEE 802.11 through Matlab simulation. The tests have shown significant improvements in throughput and energy efficiency performance using CWA compared to the original BEB algorithm.

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Sign Language Interpreter for Specially-Abled People

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Abstract: interact with each other via speech to communicate their thoughts, ideas, and experiences to those around them. However, this is not easy in the case of deaf and dumb people. Sign language has paved the way for communication for the deaf and mute. Deaf people can communicate without voice using sign language. The objective of this work is to develop a sign language recognition system that would allow people with speech impairments to communicate with the public easily and reduce the communication gap between them. Hand gestures play an important role in being able to express a user's point of view in a shorter time than other gestures. In our project, we have initiated a step in developing a flex sensor-based gesture recognition system that recognizes sign language and converts them to text and speech using the Bluetooth and Text Speech app.

Sign language was designed to allow hearing-impaired people to interact with others. Nonetheless, knowledge of sign language is uncommon in society, which leads to a communication barrier with the hearing-impaired community. Sign language is the main means of communication between the hearing impaired and other communities and it is expressed through manual (body and hand motion) and non-manual (facial expression) features. These features combine together to form utterances that convey the meanings of words or sentences. The research community has long identified the need for developing sign language technologies to facilitate the communication and social inclusion of hearingimpaired people. Sign language technologies cover a wide spectrum, ranging from the capturing of signs to their realistic representation in order to facilitate the communication between the hearing-impaired and speaking people.

More specifically, sign language capturing involves the accurate extraction of the face, hand and fingers expressions using an appropriate sensing device in a marker-less or markerbased setup

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IoT Based Vehicle Accident Detection and Notification Algorithm

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Abstract: With population growth, the demand for vehicles has increased tremendously, which has created an alarming situation in terms of traffic hazards and road accidents. The road accidents percentage is growing exponentially and so are the fatalities caused due to accidents. However, the primary cause of the increased rate of fatalities is due to the delay in emergency services. Many lives could be saved with efficient rescue services. The delay happens due to traffic congestion or unstable communication to the medical units. The implementation of automatic road accident detection systems to provide timely aid is crucial. Many solutions have been proposed in the literature for automatic accident detection. The techniques include crash prediction using smartphones, vehicular ad-hoc networks, GPS/GSM based systems, and various machine learning techniques. With such high rates of deaths associated with road accidents, road safety is the most critical sector that demands significant exploration. In this paper, we present a critical analysis of various existing methodologies used for predicting and preventing road accidents, highlighting their strengths, limitations, and challenges that need to be addressed to ensure road safety and save valuable lives.

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Investigations on Managing Triple Constraints in Construction Project Through Real Time Case Studies

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Abstract: The construction industry is facing a down surge in completion of projects on time and under budget. There are various reasons and causes for this situation. This paper deals with the identification of the risk causing factors related to triple constraints in projects, quantification and mitigation of these factors in projects. Copious journals were read and factors causing risks in projects were identified. A residential building was chosen for the study and the field data of the building namely building drawings, plan, elevation and estimate were collected directly from the site. Primary data were collected through questionnaire survey. This survey was done to identify the risk causing factors directly from the field workers and stakeholders of the project, where the respondents were asked to rate the risk causing factors on a four point Likert scale. The results from the field data and the questionnaire were analyzed using SPSS frequency analysis software. Some of the most rated factors according to the analysis wereunanticipated weather conditions, legal issues, frequent design changes, lack of skilled labours, delay in payment of completed work etc. Mitigation measures, according to expert's advice and journal references were suggested for these identified risk-causing factors. From the work it can be concluded that learning from project experience is still lacking in the area of construction planning and control. It is important to keep these factors in mind at the planning stage itself to reduce the impact of risks on triple constraints for smooth execution of the projects.

Index Terms : Time, Cost, Scope, Questionnaire survey, Mitigation measures

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Rising Psychological Stress among Corporate Professionals in India Due to Breakdown of Social and Traditional Values

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Abstract: Now a days corporate professionals are confronting substantial variations in work areas and labour relationships; they face huge amount of pressure to meet up the requirements of current working life. The balance between life and work is getting diminished due to the rate of work imposed by instantaneous connections and arcing global competition. With significant changes in the social framework, there has been conflict with regards to perception of values especially in work culture. With contrasting social values and fast paced modern lifestyle, they find themselves being confronted with stress anxiety and depression. The inability to adopt the modern values along with the traditional values has encroached the physical, emotional political, economic, religious, and moral values of the society. Also, due to increase in competition, there is rise in expectations, conducive to stressful working situation. Generally, stress at workplace is becoming global issue which is affecting all kind of professions and people involved in it equally to all countries. In another retrospect various studies have alluded corporate professionals are vulnerable to higher stress, leading to mental issues like depression and anxiety. The article aims to evaluate stress level among corporate professionals and its relationship with social and health related factors due to decimation of the social and traditional values.

Keyword: Psychological Stress, Social, Traditional, Values, corporate professionals.

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What are the factors affecting decision making of student's opting for Management studies in India

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Abstract: Decision making for management studies is a crucial stage in student's life. Students reflect on several factors taking a decision. The purpose of this study was to understand that what are the factors affecting decision making of students' opting for management studies in India. This study explored the influence of several factors such as social environment, personal interest, financial status etc on the decision making of 12 students from two premium business schools in India. The influence of social environment on the participants' decision making was examined. It was also examined that personal interest, good career choice and stating up a business were the factors that influenced the decision making of the students'. Data was collected through semi structured in-depth interviews. The results show the experiential gains as most significant, followed by Interest and others. In the study, the concerns and doubts of the students were also explored with the expectations of the students and their family after completion of Management studies.

Keywords: Management studies, factor affecting, students' decision making, India

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Analysis of Combination of Practicing Asana and Neuromuscular Drills on Abdominal Strength of School Level Fencers

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Abstract: The reasons for the current report were for undestanding combined practices of asana with the drills of neuromuscular on behalf of the strength of abdominal or fencer levels of school. The achievement of the study, there were 36 fencing players whose ages were 11 to 14 from the coaching center of Fencing and it is in Kanyakumari and the selected subject was Tamil nadu at random. Randomly, three equal groups were formed by them , i.e, two groups were experimental and one of the control group. Training of neuromuscular was entertained by the group 1 (n=10, AP) of experimental, combination of yoga and neuromuscular training was received by group 2 (n=10, AP + ND) and Group 3 was working a controlling team and team was not participant in training. Selection of stomach strength was as a variable criterion and it was tested by fifty meters dash.; the scores were recorded in seconds. For finding out the significant meaning difference of pre to post test, a pair of sample test has been used in every group and the significant meaning of post test difference was observed by ANCOVA. Comparison with pairwise was found out by the test of Scheffe's hoc post. A significant improvement was occured on the strength of abdominal and this improvement was proved clearly by the result by better performance of the experimental group than the controlling group.

Keywords: Yoga, Fencing, Abdominal Strength and “ANCOVA”.

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27th & 28th April 2022

Changes in the Activity of Proline-Metabolising Enzymes is Associated with Increased Cultivar-Dependent Chilling Tolerance in Mangos, in Response to Pre-Storage Melatonin Application

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Abstract: Pre-storage 100 µM melatonin (MT) treatment was tested its effectiveness in alleviation of chilling injury (CI) in mango cultivars ('Langra', 'Dashehari', Chaunsa', and 'Gulab Jamun') stored at 5 ± 1 ºC for 28 d. Among all, mangoes of 'Langra' were the one to have maximum alleviation of CI whereas mangoes of 'Gulab Jamun' have not experienced any effect of MT application on CI reduction. And mangoes of 'Chaunsa' and 'Dashehari' have shown response in between the 'Langra' and 'Gulab Jamun' mangoes. This difference in the mentioned four cultivar was because of the noticeable positive variation in physiochemical properties namely, pH, titratable acidity, firmness and total soluble solids with MT treatment in 'Langra' mangoes. Additionally, lower respiration rate, delayed ethylene production and lower malondialdehyde was noticed in MT treated 'Langra' mangoes. Furthermore, proline metabolism was another factor that justifies the variability of chilling tolerance in all four mango cultivars with enhanced accumulation of proline in 'Langra' mangoes due to the change in the activity of key enzymes namely, ornithine-δ-aminotransferase, Δ^1-pyrroline-5-carboxylate synthetase and proline dehydrogenase.

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Comparative Analysis of Bamboo Fiber Reinforced With Glass Fiber Leafspring and Conventional Leaf Spring

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Abstract: Steel leaf springs or conventional leaf springs are widely used in heavy vehicles, but with the advent of new composite materials such as natural fiber composites, light hybrid materials with good strength can be obtained. The aim of our research is to do a comparative analysis between bamboo fiber reinforced with s-glass and with e-glass fiber leaf springs and conventional leaf springs. To carry out the objective, we treated the bamboo fiber with sodium hydroxide (NAOH) for 24 hrs and then dried it in the sun. The dried fiber was then reinforced with s-glass and e-glass fibers in an epoxy matrix. The composite thus obtained is then grinded to obtain the specific dimensions of a single mono leaf spring. After that, we subjected the obtained composite leaf spring to various tests, such as maximum load bearing test till max. deflection is obtained, Three point load test, and Tensile test. The results thus obtained are represented in the form of a graph. The upcoming era is of e-vehicles which are light in weight, but if we use conventional leafsprings in vehicles such as e-rickshaws, the weight will increase and reduce the efficiency of such vehicles. Hence, our research in this field can help and put light on new light-weight composites which might in the future give us an alternative to conventional leafsprings.

Keywords: Bamboo fiber, epoxy , e-glass , leafspring, s-glass.

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27th & 28th April 2022

Blockchain based permissioned Electronic Health Records System

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Abstract: The progress of blockchain has led to its incorporation in various fields including healthcare. Since the beginning of data sharing systems one of the major flaws that has been present across various fields is the data confidentiality. Traditional systems have been able to develop various models to surpass the confidentiality problems but following it leads to poor data sharing systems and unavailability of data. A collection of electronically stored health records about the patient provides information of significance and needs to be protected from unauthorized access. In this paper we propose a methodology to securely accumulate patient data and provide patient the authority and complete control over the data sharing using permissioned blockchain technology based on Hyperledger. The patient has the ability to provide consent to members of the hospital and only those with the authority are able to interact with the patient data which is stored in form of blocks on a permissioned Blockchain. The proposed work is implemented using Fabric Test Network setup provided by Hyperledger Fabric which is a permissioned blockchain framework.

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Influence of fly ash and alccofine on various properties of self-compacting concrete

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Abstract: In recent times, the demand for raw materials in the production of concrete needs good quality and cost-effective alternative materials like fly ash and alccofine. The replacement of raw materials protects the depleting natural resources and reduces CO2 emissions. The fly ash and alccofine are ultra-fine cementitious materials that offers many benefits, especially in Self Compacting Concrete (SCC). This research paper conducts several experiments to explore the possibility of alccofine and fly ash as replacement of cement in SCC. In this research paper, SCC mixes are designed, and the cement is replaced with alccofine (10%) and fly ash (10%, 20%, 30%, and 40%). Several tests are carried out for analyzing the Split Tensile Strength (STS), Compressive Strength (CS) and Flexural Strength (FS) of SCC. The experimental results shows that the CS, STC, and FS of SCC improved with the inclusion of 10% alccofine and 20% fly ash at the curing ages like 7,14, 28, and 90 days. The SCC mix with 10% alccofine and 20% fly ash obtained effective CS of 63.34 MPa, FS of 10.82 MPa and STS of 5.95 MPa, which are higher compared to other concrete mixes.

Keywords: Alccofine, compressive strength, flexural strength, fly ash, self-compacting concrete, split tensile strength.

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Cotton Plant Disease Detection And Control Using Convolutional Neural Network

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Abstract: Agriculture is the major source of livelihood for almost 58% of India's people. According to statistics, global agricultural production and yield growth rates have slowed. With the requirement of increase in yields, rotting of crops is the biggest foe. To guide farmers understand and take immediate action on any crop damage we intend to bring forward our system that is a cotton plant disease detection using convolutional neural network system. If the infection or disease on the crops was not identified by the farmers at the initial level then it will be harmful to the crops as well as for farmers. We intend to help the farmers by studying their captured images of the cotton plant and guide them regarding the same. This will be created in every Indian language for the convenience of farmers. To use this, the user must first upload an image of a cotton leaf, which may then be processed using image processing to produce a digitised colour image of a damaged leaf, which can then be further processed using the CNN algorithm to determine the true cause of the cotton leaf disease. With the help of Image processing, deep learning, data analysis we shall develop this system in the domain of Machine Learning and Data Science. We have a substantial vision for the system with great scopes of expansions on different levels.

Keywords: Deep learning, Convolutional neural network(CNN), Disease detection, Epoch

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Facial Recognition System In Unmanned Aerial Vehicle (UAV)

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Abstract: Facial Recognition systems and UAVs have become the latest trend in the tech industry. Lately, UAVs have been built for diverse purposes such as cinematography, photography, security, surveillance, etc. Similarly, Facial recognition systems are being used in various fields, from biometrics to simple facial expression analysis. The aim of this paper is to give a detailed account of the possibilities when both these technologies are merged into a single piece of equipment and the various fields it can be used in. This paper shall also describe the working capabilities and the downsides as well

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27th & 28th April 2022

Computation of different Topological Indices of Line Graph and Sub-division graph of Friendship Graph using $M-$Polynomial

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Abstract: Line graph sub-division graphs are two important derived graphs of a graph. Using M− Ppolynomial, we can derive several degree-based topological indices of a graph. In this article, we have obtained 18 different topological indices of line graph and sub-division graph of a friendship graph. Also 2- D and 3-D graphs of the polynomials associated with these indices are drawn.

Key Words: M− Polynomial, Zagreb Index, Banahatti Index.

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Unmanned Helicopter Project

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Abstract: In the last years UAV (Unmanned Aerial Vehicle) systems are become very actractive for various commercial, industrial, public, scientific and military operations. The tasks include pipeline inspection, dam surveillance, photogrammetric survey, infrastructure maintenance, inspection of flooded areas, firefighting, terrain monitoring, volcano observations and so on. The impressive flying capabilities provided by UAVs require a well-trained pilot to be fully and effectively exploited; moreover, the flight range of the piloted helicopter is limited to the line-of-sight or the skill of the pilot to detect and follow the orientation of the helicopter. Such issues have motivated the research and the design for autonomous system guidance which could both stabilize and also guide the helicopter precisely along a reference path. The constant growth of research programs and the technological progress in the field of navigation systems, as denoted by the production of more and more performing GPS/INS integrated units, allowed a strong cost reduction and payload miniaturization, making the design of low-cost UAV platforms more feasible and actractive.

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Production and Characterization of Hybrid Aluminium Metal Matrix Composites

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Abstract: Development of hybrid metal matrix composites has become an important area of research interest in Materials Science. In view of this, the present study focuses on the formation of aluminium hybrid metal matrix composites. The present study was aimed at evaluating the physical properties of Al 2024 in the presence of reinforcement composites and its combinations. Consequently, aluminium metal matrix composites combine the strength of reinforcement with the toughness of the matrix to achieve a combination of desirable properties not available in any single conventional material.
The main aim of this paper is to focus on fabrication of an aluminium hybrid metal matrix composites by varying reinforcement composition by a percentage of volume, then the fabricated composite can be characterized of various mechanical properties such as density, tensile strength, yield strength, wear resistance and hardness.

Keywords: Aluminium, hybrid metal matrix composites, stir casting, reinforcement composites

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Exploring Digital Marketing Tools on Buddhist Tourism Destination Choice Special References Sikkim

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Abstracts: The Present study goal is to identify the effects of digital marketing tools on Destination choice. A conceptual model has been applied to know the effects on it.Confirmatory factor analysis and Structural equation model has been estimated to measure research hypothesis .The convenience sampling method has been applied in this study. The findings revealed that the three -factor i.e. web designing marketing, Mobile Marketing, Email marketing shows a positive relationship between Buddhist tourism destination choices. The findings of the study will help the community of monasteries stakeholder, government organization and the visitors. The present study is limited to four monasteries of east and west Sikkim has been distributed and 235 were usable. Hence, data has been analyses with descriptive statistics like frequency and percentage in the demographic profile of the respondents. Among the digital marketing tools the three factors related to the destination choice which has a positive relationship between the variables. Therefore, digital marketing tools plays a significant role for travelers to choose the destinations.

Keywords: Social Media, Mobile Marketing, E-mail Marketing, Web Design Marketing, Buddhist Monastery.

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27th & 28th April 2022

Anti-Theft Vehicle Security System Using GSM and GPSTechnology

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Abstract: In our daily life we all are most dependent on the vehicle to travel to any place due to that the productivity of the vehicles have increased at the same time the theft of the vehicles have been also increased. Due to that it had become a severe problem for the owners to protect their vehicle, to overcome the problem the technology in real time also need to be developed, an Anti-theft vehicle system is developed which is both user friendly and cost effective, this system uses the Arduino which acts as controller and the ignition of the vehicle is turned of with the help of the Arduino the owner uses his own mobile to send the instruction to Arduino through the GSM module and owner receives the location of the vehicle with the help of GPS module in the form of string i.e. the latitude and longitude values of the exact location of the vehicle. Here we are implementing camera so it can record the face of the theft, it will be more helpful to identify the theft.

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Quantitative analysis and characterization of Blast furnace solid waste: Flue Dust

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Abstract: The Steel consumption in India is anticipated to increase to 230 MT by 2030-31 from 93.43 MT in 2020-21 as per India Brand Equity Foundation (IBEF). The main raw materials necessary for the production of Steel are limestone, coke and Iron ore etc. This raw materials are charged in the Blast furnace operation which works in the principle of chemical reduction at high temperature (1500^0C) and produces Hot metal along with by product" Flue Dust. Flue dust is hazardous in nature and hence gives environmental pollution when dumped in open land. As per the anticipation of growth in Steel sector, we can also say that there will also be growth in the amount of flue dust in the upcoming future and hence this study revolves around analyzing Flue dust from different angles to understand its characterization and correlation with other variables keeping in mind the future scope of finding out its utilization via different applications. The statistical analysis is conducted by IBM Statistics 20 shows that there is a high correlation between amount of flue dust and Hot metal production. XRD test has been conducted for characterization which helped us to determine chemical composition of flue dust. The overall aim of the study is to extract maximum practical benefits from this waste product and comply with environmental legislation and regulation and economics of disposal.

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ICF-EMS
27th & 28th April 2022

American Sign Language Recognition System

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Abstract: Sign language is widely used for communication for the people who are deaf and dumb. For communication purpose, sign language is available in different forms with difference in hand gestures. These features are used as communication to express their thoughts. It's often difficult for people who aren't trained in sign language to communicate. This issue is faced in different industries like health, education, day to day activities, tourism. To overcome these difficulties, a system was implemented using American Sign Language, to ease the process of communication between people who are impaired and ones who might not know the American Sign Language.

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Calculating impact of age on effectiveness of EIBI in 3-5 years old ASD children in Delhi, India

Gurbani Kohli, Dr. N.K. Chandel, Dr Anant Agarwal

Abstract: About 1 in 160 children has an ASD (Mayada Elsabbagh, June 2012). Autism spectrum disorder (ASD) is a heterogeneous neuro-developmental condition described by lack of social communication, social interaction, and sensory and repetitive behaviors. Behavioral programs which are implemented as early as possible and in an intensive manner, called as early intensive behavioral interventions (EIBI)] can be effective in improving cognitive, adaptive, and social, communicative outcomes in ASD children. (Rogers S, 2011) (Reichow B, 2012). Early identification and treatment have gained even more impetus recently but there is no research in India to highlight which age group between 3-5 years shows the maximum effect of the EIBI treatment . Hence, this study Statistically calculates effectiveness of EIBI and the impact of age in EIBI treatment among ASD children between 3-5 years of age. Results prove EIBI to be an effective treatment to treat ASD children suffering from mild to moderate autism between 3-5 years of age in a clinical setting and there is an impact of age on the treatment of EIBI. Effect of EIBI treatment decreases with age, in other words, it is most effective when the treatment is started early.

Keywords: EIBI effectiveness, ASD, Impact of Age, Social competence, Autism severity, Intervention, Autism treatment, Clinical setting, Effect size

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Assessment of Social Infrastructure of Thane City

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Abstract: The study of Assessment of the social infrastructure of the Thane city, is prepared with the objective to analyze the present status of the social infrastructure of Thane city, identify the future needs and propose new social infrastructure that fulfils the needs of the citizen and to achieve overall growth of the city. For the study, the required information and data are collected from physical surveys, online survey using google form in terms of public opinions, interviews of the officials, interviews of the experts, Physical observations. The secondary data is collected from the Thane Municipal Corporation and its various departments, as well as the Thane District collector office and the official websites of these local bodies. Collected primary, secondary and spatial data is organized and quantitative, qualitative and spatial analysis of the data is done by understanding the public opinion and their needs. The Recommendations and proposals are given on the basis of surveyed data and analysis.

Keywords: Social infrastructure, qualitative & quantitative assessment, Thane Municipal corporation, Spatial Planning

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Smart Farm Hydroponics Using Iot and Ml

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Abstract: Agriculture plays a major role in improving the economy of the country. Modern farming technique like Hydroponics is in rise which is soilless farming culture and the plants were grown with the help of nutrient solutions. The method employs an open source computer vision and machine learning software, OpenCV-Python and installed in Raspberry Pi. The system that has been designed and built, is automated, and uses sensor data to make decisions by using Lasso Regression algorithm to benefit the crops being grown.

IOT is used to transfer the retrieved data to the internet (mass storage) and mobile application is used to communicate the current status to the user through the use of internet to their mobile application, so that monitoring and maintenance will be easier. Here an IOT based hydroponics system parameters are monitored via android application. With our system we hope to solve the potential food crisis and give everyone access to fresh produce all year round.

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27th & 28th April 2022

Smart Voting System using Face Recognition

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Abstract: A new authentication technique is introduced in this paper for online voting system through using face recognition. We can caste the through this process. Currently in India, there are two types of voting is done. First one is Secret Ballot Paper, second one is Electronic Voting Machines (EVM). In these both of the process has some limitations or. Till now India has not been implemented online voting. The two voting systems is currently not safe and secure. The current voting system is that voters have to go for particular place like polling booths and they have stand in a queue for long time to cast their vote. Because of these problems most of them will miss their voting chance. Some of them who is not eligible for voting can also cast their vote by fake id which can leads to many problems. So, in this project we have proposed a system or a method of voting which is more effective for voting. We have introduced four levels of security in voting process for this project. The level one is verification Unique Id Number (UID), level two is verification of Election Id Number (EID), level three is verification of RFID and level four is recognition of face or matching face. The security level is improved greatly in our system using new application method for voter. The user authentication process is improved greatly by adding face recognition in our application. So, that it definitely will help to find out the particular user in the process of user authentication in the system.

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Diabetic Retinopathy Fundus Image Classification using Deep Learning

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Abstract: Image segmentation is the process of partitioning a digital image into multiple segments (set of pixels also known as image objects). The goal of segmentation is to simplify and/or change the representation of an image into something that is more meaningful and easier to analyze. Retinal imaging is a common clinical procedure used to record a visualization of the retina. Segmentation of blood vessels in retinal images is used for the early diagnosis of retinal diseases such as hypertension, diabetes and glaucoma. The segmentation of blood vessels is an important preprocessing step for the early detection of retinal diseases. Retinal vasculature extraction helps in diagnosing the early detection of diabetic retinopathy to prevent blindness.

In this paper we propose the work for classification of diabetic retinopathy into five stages – no DR, Mild, Moderate, Severe, Proliferitive DR. Diabetic retinopathy detection contains three steps -pre-processing of color fundus images, diagnostic feature extraction and classification of DR. So by using several image algorithms we find the thickness of the blood vessels which determine the severity of diabetes a person may have.

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ICF-EMS
27th & 28th April 2022

Plant Leaf Disease detection using Artificial Neural Networks

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Abstract: Agriculture is a key source of livelihood. Agriculture provides employment opportunities for village people on large scale in developing country like India. India's agriculture is composed of many crops and according to survey nearly 70% population is depending on agriculture. Most of Indian farmers are adopting manual cultivation due to lagging of technical knowledge.
Farmers are unaware of what kind of crops that grows well on their land. When plants are affected by diseases through leaves that will effect production of agriculture and profitable loss. Also, reduction in both quality and amount of agricultural production. Leaves are important for fast growing of plant and to increase production of crops. Identifying these diseases in plants leaves is challenging for farmers also for researchers.
The aim is to detect these plant leaf diseases by adopting fast techniques, need. We will make a project on plant leaf disease detection using artificial neural networks to detect disease on leaf, to give a reliable result to the farmer.

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Seismic Condition Assessment and Retrofit Design of Keshar Mahal

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Abstract: Retrofitting, a technique which improve the structural strength, stiffness, ductility, stability of buildings which found to be deficient. It can enhance the performance efficiency of a building. In this paper, a Reinforced concrete building of G+3 will be analyzed and designed in E-tabs software. Later 3 number of floors will increase above the top floor of existing building so that the building floors becomes G+6 and again it is added by 2 more numbers above the top floor of existing building now it becomes G+8. Because of increment in floors the loads on the building will increase, due to this the existing columns may fail in design which intern the fail columns, may be maximum in bottom storey, now check has to be made how many number of columns fail which will be rectified by RC jacketing technique, because of RC jacketing, the column strength will be increased and the jacketing will be designed to carry the increase loads by using IS code (IS 15988:2013) and the RC jacketing will be done in NISA software. In the software each failed column are modeled and then increased area of RC column can able to take an increased load so the building can be raised. Hence RC columns will be strengthened to carry more load which helps in increased load safely.

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Frontiers in Engineering, Management and Science
ICF-EMS
27th & 28th April 2022

Intelligent Packing System through IOT

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Abstract: The Internet of Things (IoT) is a scenario in which objects, animals or people are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS) and the Internet. With IoT, devices typically gather data and stream it over the Internet to a central source, where it is analyzed and processed. With IoT, devices typically gather data and stream it over the Internet to a central source, where it is analyzed and processed. As the capabilities of things connected to the Internet continue to advance, they will become more intelligent by combining data into more useful information. To handle such situations we propose a solution by automating the parcel collection unit. This paper discusses about the part of IoT in home sophistication, the proposed approach.

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Soldier Security Device

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Abstract: The main objective of this project is to monitor the health conditions of a soldier. Heartbeat and body temperature of every soldier will be monitored. This technology can be helpful to provide the accurate location of the missing soldier in critical conditions and overcomethe drawback of soldiers missing in the action.
The Indian Army is the land-based branch. It's the largest component of Indian Army. In this project we have explained how to track the location of the soldier with the help of GPS and all sowill be able to monitor health parameter such as pulse rate and body temperature. The measure parameters will be sent to the control room with the help of GSM module to know the condition of the soldier. The pulse rate will be measured and will inform the military base station through GPS we can locate the wounded soldiers. Hence, it is possible to implement a low cost mechanisms to protect the valuable human life on the battle field.

International Conference on
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ICF-EMS
27th & 28th April 2022

"Aircanvas using OpenCV"

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Abstract: With all the new technologies arriving in the field of AI, human computer interaction is becoming feasible. The main proposition is to develop software which intends human interaction with computer through air. Computer vision plays important role in detecting gestures of human hands. These hand gestures are employed to execute different operations. OpenCV and MediaPipe are prime libraries used for image processing and determining hand gestures respectively. This proposed project will allow user to interact with the computer virtually through air by detecting user's fingertips. To detect user's fingertip, we don't use any hardware parts, only computer webcam is enough to detect and output the same to user's screen. By detecting all landmarks provided by MediaPipe we will map it to various operations like virtual painting, mouse, keyboard, presentation etc. This system will be the most effortless and natural way of communication with the computer.

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Advanced Footstep Power Generation System

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Abstract: With the reduction in energy consumption of portable electronic devices, the concept of gathering renewable energy in human surroundings arouses a renewed interest. This paper focuses on one such new way of energy harvesting using piezoelectric sensors. Piezoelectric sensors can be used as mechanisms to transfer mechanical energy like vibration, into electrical energy that can be stored and used to power other devices. Piezoelectric sensors have more applications in real life. More sustainable forms of electrical power are needed to keep costs lower, to maintain productively and positive relationships with nature, and to ensure a healthy environment for upcoming future generations. The use of piezoelectric devices installed will enable the take of kinetic energy from foot traffic. This energy can be used to offset some of the power used to operate the lighting systems. These devices are used in a huge number of comforts in our daily lives. With the increase in energy consumption of these portable electronic devices, the concept of gathering alternative renewable energy in human surroundings arise a new interest among us. In this paper, we try to develop a new piezoelectric energy generator. That can produce energy from pressure and vibration available on some other terms (like people walking). This project describes piezoelectric materials used to produce energy from people walking vibration for generating and accumulating the energy. This concept is also applicable to some large vibration sources which can find from the natural system also represents a footstep of the piezoelectric energy harvesting model which is cost-effective and easy to implement.

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ICF-EMS
27th & 28th April 2022

Charging Station For E-Vehicle using Solar Based IOT

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Abstract: This paper is about charging E-vehicle module using the Solar panel, availability of maximum power is viewed by IOT device and the maximum power generated by the solar is being tracked using the MPPT controller. The whole setup is connected to the Arduino UNO, the battery level, generated and distributes an amount of the battery is viewed using an LCD. Here if battery is not charged then we have to charge using plug. GSM modem is used to get an alert message for any reduction of power occurred in the system. A web page is used to check the availability status of charge, the amount of power transferred to the charging module and the available location for the charging station can be displayed. The main idea of this paper is to reduce greenhouse gas emission and fossil fuel.

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Amalgamating Lean and Value Engineering Concepts in Construction Projects

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Abstract: Environmental Protection Agency (EPA) estimates that 150 million tonnes of construction waste is produced every year. As per Bigrentz article 2021, it is expected that 2.2 billion tonnes of construction and demolition waste will be generated globally by 2025. Also, India has generated construction and demolition waste of 150 million tonnes in 2020. According to these statistics, it is be found that waste generated during construction processes is a crucial factor that imparts time and cost overrun in construction projects. Many constructions industries are finding innovative ways to reduce their waste contribution. The principle applications of lean construction and value engineering are aimed at minimizing waste generation and maximizing value in construction processes. Lot of researches has been done related to introducing concept of lean construction and value engineering separately in projects. However only limited research has been done related to integration of both lean and value engineering applications in construction projects. In this Phase I dissertation work extensive review of literature research work related to lean construction and value engineering principles has been done. Also the learning acquired has been applied to an ongoing commercial project. Preliminary investigation on the project has been done related to identification of critical activities contributing to delay in project, identification of non-value added activities in the project identification of causes for delay in activities of the project, also selection of Lean and Value engineering tools have been suggested for non-value activities to improve performance of project.

Keyword: Lean Construction, Value Engineering, Waste, Time Overrun, Cost Overrun

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ICF-EMS
27th & 28th April 2022

Power Saving Mechanism for Street Lights using IOT

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Abstract: In India, energy consumption plays a major role in day to day life. The outcome is that a large portion of electrical energy used by the Street lighting is wasted unnecessarily if the road traffic is minimum. Conventional street light systems are switched on/off for fixed duration of time .If smart street light is designed and implemented in the cities then, lot of power can be saved .Use of LED lamps over Conventional Street lamps reduces the pollution and increase the life span of lamps .LED lamps has better luminous efficacy as well as better color rendering index. The system is modified in such a way that will automatically turn off during daytime and operates only during the night. System automatically minimizes the intensity of the light after midnight meanwhile if any vehicle passes by then respective set of lamps will be on at maximum intensity.

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Agrisight - Crop Yield Prediction and Crop Leaf Disease Detection

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Abstract: In the disciplines of information technology and agriculture, machine learning and deep learning are two new topics of research. Agriculture is one of the most significant vocations in India. Our farmers encounter a variety of obstacles as a result of a variety of uncontrolled factors.
We must verify that a given crop can yield in a specific place and climatic condition for optimal crop production. A crop that isn't producing as well as it should be is most likely infected with some disease. As a result, our study is divided into two sections: crop yield prediction, which will help farmers decide which crop to plant, and crop leaf disease diagnosis, which will help farmers easily diagnose the disease with a single click. With the help of prediction, we would be able to make more strategic agricultural production decisions. Machine learning may be used to get insights into the agricultural life cycle, which is highly beneficial. Machine learning is a useful technique for predicting agricultural yields as well as deciding which crops to sow and what to do throughout the growing season. The most prevalent causes of plant ailments are rodents, insects, and infections, which, if not addressed quickly, can severely reduce output. A variety of agricultural diseases are causing farmers to lose money. Crop diseases pose a significant threat to food security, yet fast identification is difficult in many parts of the world due to a lack of expertise. Smart technology assisted illness detection is now possible, because to a combination of rising worldwide technology penetration and recent improvements in computer vision enabled by deep learning. Detecting plant diseases is a significant research topic in the field of computer vision. It's a method of photographing plants with computer vision technology to detect if they're infected with diseases or pests. In agriculture, computer vision-based plant disease and pest detection technology is being utilized to replace traditional naked eye recognition.
The suggested framework is divided into two stages: the first is for training data sets, and the second is for real-world data sets. For training, both stable and sick data sets are used. The second phase comprises monitoring the crop and identifying the illness.

Keywords: Agriculture, Crop Production, Machine Learning, Decision-Making, Crop Diseases, Disease Detection, Deep Learning, Computer Vision, Training Data

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ICF-EMS
27th & 28th April 2022

An Internet of Things (IoT) and Arduino-Based Energy Efficient Solar Tracker

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Abstract: Internet of Things (IoT) technologies, as well as economies of scale and technological developments in both hardware, software and network technologies, have enhanced the proliferation of the linked things throughout IoT. A platform for the Internet of Things may manage a connected object remotely and can send, receive, and analyses a range of data. We provide a simple and cost-effective way for monitoring and managing a smart solar tracker system for performance assessment in this article by utilizing several IoT technologies. Additionally, the system has alert notifications that notify a remote user via cell, email, or both when a sensor crosses a predefined threshold value. The system is based on low-cost, user-friendly hardware and software, as well as an open-source internet of things platform that is freely available online. Additionally, an Internet of Things-based solar tracker prototype was built and tested. Solar tracker data can be given promptly and precisely, and the solar tracker can take orders from the IoT monitoring app, according to test findings.

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IoT Based Implementation o f Air Monitoring and Purification System

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Abstract: Air pollution is one of the global health concerns and has been ranked among the top five global risk factors by the Health Effects Institute. More than 80% of the population in urban areas is exposed to toxic gases that exceed the standards set by the World Health Organization. To provide a safe environment and take the necessary precaution, a system that will monitor and store data regarding the presence of harmful gases is needed. The project presents the concept, functional and physical model of an air monitoring and purification system for small areas. The IoT-based system includes a microcontroller and sensors that observe the air quality by detecting harmful gases present in the atmosphere, the levels will be monitored remotely and the data is stored in the cloud.

Key Words: Internet of Things (IOT), MQ sensor series, Air Quality Index (AQI), Thing Speak, HEPA filter, NodeMCU

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27th & 28th April 2022

Influence of the precursor functional groups and synthesis methods on the intrinsic and morphological properties of ZnO

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Abstract: The tuning and designing of semiconductor oxides to obtain desirable properties is an important technique in the field of nanotechnology to improve performance and efficiency toward the specific application. In this paper, we will analyze four different ZnO nanoparticles with different morphological and intrinsic properties. The ZnO samples are synthesized from two different zinc precursors: zinc acetate and zinc sulphate through synthesized through two different synthesis methods: precipitation and hydrothermal method. The influence of the synthesis method and zinc precursor on ZnO properties are studied by X-Ray Diffraction (XRD), Raman, UV-Vis absorption, FT-IR spectroscopies, and Field Emission Scanning Electron Microscopy (FESEM) analysis. With the variation in the zinc precursor, the ZnO exhibit differing properties. The ZnO synthesized from the hydrothermal synthesis method provides higher crystallite sizes of 29 nm than ZnO prepared from the precipitation method of 19 nm. The nucleation and growth of the ZnO nanomaterials and the influence of zinc precursor functional groups in the ZnO properties are discussed. Also, the effect of the change in structural and chemical properties of the synthesized ZnO nanoparticles on the photocatalytic degradation performance of the rhodamine B dye was performed. The degradation kinetics were determined and compared by using two different kinetics models: pseudo-first-order and pseudo-second-order kinetic models.

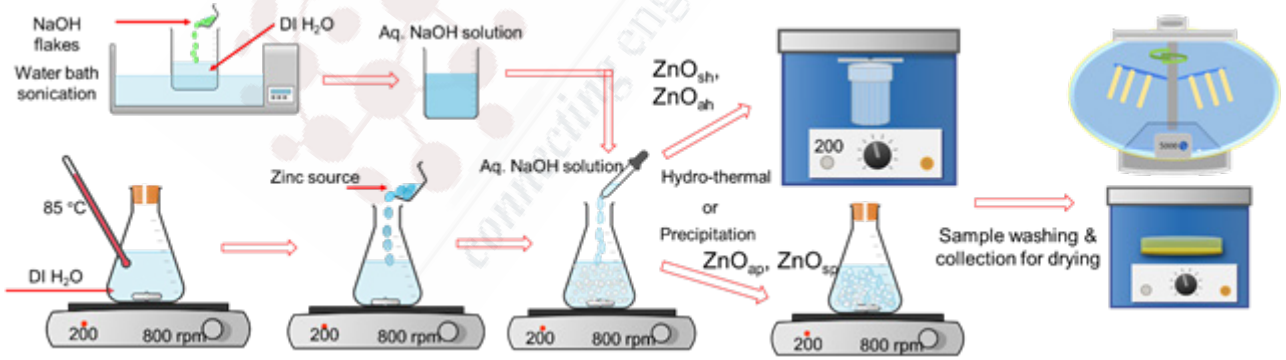

Figure 1. ZnO synthesis procedure via hydrothermal and precipitation method with two different zinc sources- ZnSO4.7H2O and Zn(CH3COO)2.2H2O

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Flight Control System Using Drone

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Abstract: Mapping techniques with remote sensing and three-dimensional (3D) earth modeling have now achieved significant progress both in terms of vehicles and sensors as well as the techniques and software used. From the vehicle side, thematic mapping with very high-resolution satellite imagery (0.5–0.3 cm) can be done easily and good results. The main obstacle of mapping using very high-resolution satellite imagery data is the acquisition of data which is still quite expensive, especially for mapping in a local-scale area and requires more frequent (daily or weekly) time series of data repetitions. One alternative to the problems as mentioned above is to use unmanned aerial vehicles (UAV) are low cost, have very high-resolution, and can be acquired at any time with few restrictions for local-scale areas. A UAV or un-crewed aerial vehicle, commonly known as a drone is an aircraft without a human pilot onboard and a type of unmanned vehicle. Some of the use of UAV drones for civilian purposes especially for mapping is as stated by which began around the 2006s which included thematic mapping for agriculture, forestry, archeology and architecture, environment, emergency management and traffic monitoring both from the aspects of projects, regulations, classifications and UAV applications in the mapping domain.

We developed an embedded system for a flight controller applied to quadrotor UAVs. Built with accessible and low cost components, open hardware architecture and open software, it makes possible the tests and implementation of new control algorithms by the user, setting it apart from the most common alternatives available on the market. For this device, we developed a sensoring system for capturing and recording the quadrotor odometry, an architecture to send the angular velocity commands to the motors via PWM, and the processing is made on a Raspberry Pi 3.

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ICF-EMS
27th & 28th April 2022

Soil Monitoring System for Enhanced Crop Yield using IoT

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Abstract: The Internet of Things (IoT) is a computing concept that describes the idea of everyday physical objects being connected to the internet and being able to identify themselves to other devices and send and receive data. Agriculture is a major occupation of India. Majority of the nation's population still depends only on agriculture. Using a collection of parameters, a better crop yield can be predicted based on the data analysed from the sensors. In this paper, we are aiming at obtaining the soil data using which irrigation is done in the most effective way and also help in the conservation of water. The soil parameters that will be sensed are soil temperature, moisture, humidity and temperature of the environment. These parameters are then sent to cloud to perform the data analysis. The proposed system helps the user to take appropriate decision based on the information collected.

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Early Forest Fire Detection Using Rule Based Image Processing Techniques

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Abstract: This paper demonstrates that optical cameras provide promising opportunities to detect and identify the forest fire at the early stage using image processing before the fire become uncontrollable. Computer vision-based fire detection can be achieved effectively compare to traditional existing system and alert the respective official via mail/message. In this paper, novel models for fire and smoke detection using image processing are used. The models use different color models for both fire and smoke. The color models are extracted using a statistical analysis of samples extracted from different type of live/ recorded video sequences and images. The extracted models are then used to detect fire/smoke which combines color information with motion analysis.

International Conference on
Frontiers in Engineering, Management and Science
ICF-EMS
27th & 28th April 2022

Power Management Strategies on Memory for Mobile Digital Devices

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Abstract: In today's age of increased usage of Mobile Devices for serious computing as well, there is much research in evolving several Low-Power IC designs to implement better Power Management. SoC(System on Chip) designers are designing mobile devices with more and more on board embedded memory to handle increased memory count due to high byte media content applications.
The primary focus of this paper while proposing improved SoC Designs for devising a Lower Power Consumption Architecture are - Power, Performance and Density Optimization.
This paper will also describe the pros and cons of different Power Management Strategies and describe a mechanism for testing resource allocation that is optimal.

Keywords: Power management,System on chip (SOC),Embedded Memory,lowpower architecture,density optimization

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Critical Evaluation of Housing Qualities through Infrastructure Assessment in Kolhapur Region

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Abstract: Housing is significant for human because of its immense importance in each individual's life. A house or home is a location where people dwell, shelter, acquaint themselves, and develop a Habitat. It's intertwined with family life and linked to other aspects of life like social life, work, and education. Housing should be considered as a collection of attributes that are employed to achieve specific objectives, such as comfort and beauty. Housing has enormous psychological significance in terms of satisfaction, prestige, privacy, security, and equity. Despite the fact that India has been a republic for 72 years, most cities face significant issues in providing secure and suitable housing for their residents, as well as excellent infrastructure, particularly in rapidly growing areas where housing options are limited. The main goal of this paper is to critically evaluate the physical infrastructure in the region in relation with housing and household utilities like power, water supply, sanitation, and drainage, as well as housing conditions; thus, establishing the relationship between housing qualities and availability and usability of infrastructure services of Kolhapur region. Being an administrative unit, Kolhapur District is considered as a Kolhapur region.

Index Terms: Housing Quality, Housing Conditions, Kolhapur Region, Infrastructure Services, Physical Infrastructure

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A Review on the potential of Artificial Intelligence Algorithms to predict and optimize invitro sterilization process to combat contamination in Plant Tissue Culture

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Abstract: Plant Tissue culture is a promising technique for growing and multiplying healthy and disease-free plants. To produce healthy plants, invitro sterilization is the first and the most important step, productivity in the Plant Tissue culture is directly dependent on the efficiency of the sterilant used and the sterilization protocol followed. A small mistake in the sterilization procedure can lead to a loss of chemicals, time, and labor. To eradicate and minimize the problem of contamination, Artificial Intelligence Algorithms are used to model and optimize the sterilization protocols. This review paper discusses the different Multi-Layer Perceptron models designed (depending on sterilant variables i.e., Different types and Concentrations of Sterilizers, and the immersion times to model outputs for Contamination Frequency and Explant Viability) to predict the results, the optimization algorithms such as the Genetic Algorithm used to optimize the results obtained and analysis of the performance of predicted and optimized set of Variables. The Artificial Intelligence Algorithms have the potential to predict the combination and sets of variables for the high rate of explant viability and low rate of contamination.

Keywords: Artificial Intelligence, Plant Tissue Culture, Sterilization, Contamination

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Blockchain in Agri-Food Traceability Systems

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Abstract: Controlling the product quality in food industry throughout its supply chain is today one of the most challenges in the world especially when it comes to typical food products. In recent years, various companies are trying to experiment with joint use of Blockchain and Radio Frequency Identification technologies to solve problems in scenarios where numerous untrusted actors get involved. Blockchain is gaining increasing popularity as a technology to enable product traceability in a certified and immutable way from the farm to the fork of food products and to avoid fraud and counterfeiting by guaranteeing trusted, transparent and shared information in the agri-food supply-chain. By combining smart contracts, Interplanetary File System and Internet of Things technologies, this paper tries to address these issues and presents a proposal of an implementation model for the supply chain management of a typical Italian food product - Carasau bread. The main goal of the model proposal is to guarantee and certify a transparent, secure and auditable traceability in such a way each actor of the supply chain can verify the quality of the product.