ISBN : 978-81- 951120- 3-6

IFERP®
connecting engineers... developing research

SANDIP FOUNDATION

ICETET-2021

07th - 08th July 2021 | Virtual Conference

International Conference on Emerging Trends in Engineering and Technology

Organized By

Department of Mechanical Engineering,
Sandip Institute of Engineering and Management, Nashik
in Association with
Institute For Engineering Research and Publication (IFERP)

ICETET-2021

International Conference on
Emerging Trends in Engineering and Technology

Nashik, Maharashtra

07th - 08th July, 2021

Organized by:

Department of Mechanical Engineering

Sandip Institute of Engineering and Management, Nashik

In Association with

Institute For Engineering Research and Publication [IFERP]

Sandip Institute of Engineering & Management, nashik

Department of Mechanical Engineering

Naac accredited with B++

Founded year : 2010

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

On behalf of ***Institute For Engineering Research and Publications (IFERP)*** and in association with ***Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik***. I am delighted to welcome all the delegates and participants around the globe to ***Sandip Institute of Engineering and Management, Nashik*** for the "***International Conference on Emerging Trends in Engineering and Technology (ICETET-2021)"*** Which will take place from ***07th - 08th July 2021***

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 & SIEM)** and all the people involved for their efforts in organizing the event and successfully conducting the International Conference and wish all the delegates and participants a very pleasant stay at ***Nashik, Maharashtra.***

Sincerely,

Rudra Bhanu Satpathy

Preface

The ***International Conference on Emerging Trends in Engineering and Technology (ICETET -21)*** is being organized by ***Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik*** in Association with ***IFERP-Institute for Engineering Research and Publications*** *on the 07th – 08th July, 2021*.

Sandip Institute of Engineering and Management, Nashik has a sprawling student –friendly campus with modern infrastructure and facilities which complements the sanctity and serenity of the major city of Nashik in Maharashtra.

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

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

The International Conference attracted over 380 submissions. Through rigorous peer reviews 230 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.

ICETET -21

Chairman's Message

Dr. Sandip Kumar Jha

Chairman

Sandip Foundation

I am very much glad to welcome you all the participant,Keynote Speaker,Session Chairs to the International Conference on Emerging Trends in Engineering and Technology-2021 (ICETET-2021) organized by Department of Mechanical Engineering , Sandip Institute of Engineering and Management, Nashik in association with Institute For Engineering Research and Publication (IFERP), Chennai, to be held on 7th – 8th July 2021.

The main motto of the conference isn't just to speak about significant and rising issues of a Specific space but to spread it among other educated people.

From last few decades sensational upgrades have been made in the field of Science, Engineering Technologies and applications. I trust ICETET-2021 will turn out to be without a doubt the most significant International conference committed to bring out most recent patterns in Science and Technology.

As we have to promote the efforts in the direction of uplifting the research work we have welcomed recognized specialists to take an interest in the Technical Program Committee. I hope ICETET-2021 will make you aware of state-of-the art systems and Provide a platform to discuss various design issues and challenges

Convener's Message

Prof. (Dr.) Dipak P. Patil

Principal

Sandip Institute of Engineering & Management (SIEM)

On behalf of the Organizing Committee and the Department of Mechanical Engineering of SIEM, the hosting department and IFERP, it is my great pleasure to welcome you all to International Conference on Emerging Trends in Engineering and Technology-2021 (ICETET-2021) to be held on 7th and 8th July, 2021 at Sandip Institute of Engineering and Management, Nashik in association with Institute For Engineering Research and Publication (IFERP), Chennai. The idea to host the ICETET-2021 in SIEM at Nashik is to bring together Researchers, Scientists, Engineers, Scholars and Students in the areas of Engineering.

The ICETET-2021 Conference will cultivate conversations and would like to move members from a wide cluster of topics to start Research and Development and joint efforts inside and across disciplines for the headway of Technology. I feel it is critical to repeat the need to make an interpretation of Engineering and Technology into information to help defeat cultural difficulties.

The different topical sessions will exhibit significant mechanical advances and feature their hugeness and difficulties in a universe of quick changes. I invite every one of you to go to the entire sessions and oral introductions and welcome you to associate with the meeting members.

The Local Organizing and Conference Committees will put forth any conceivable attempt to ensure that your support will be in fact fulfilling and a pleasurable encounter of our Nashik City.

Co-Convener's Message

Prof. (Dr.) A. S. Dube

H.O.D

Department of Mechanical Engineering, SIEM

It gives me immense pleasure to welcome all the students of Under-graduate and Post-graduate courses and Research streams to International Conference of Emerging Trends on Engineering and Technology (ICETET-2021). Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Accredited by the National Assessment & Accreditation Council. Mechanical Engineering Department, SIEM is nurturing self-reliant and self-dependent human being to cope with the challenging world of tomorrow. We impart education to empower youth to create a space in the society. Department of Mechanical Engineering, SIEM inculcates the highest values of service to the poor and marginalized in the society.

The harmonious mix of the legacy of knowledge and spiritual ambience of our Department inspire young minds to be empowered and morally upright. We enjoyed a reputation of excellence in academic scholarship and try to keep abreast of the fast moving developments in today's scenario. Beckoning new challenges and opportunities, we are marching forward to enhance the quality of this Institution of Excellence. Keeping in see, the exchange of the hour of trans-mainland trade of ideas and

philosophies in the ongoing years, we have been attempting to accord significance to high tech showing techniques and to situate our energies, assets and infrastructural offices to present courses which are the need of great importance. We understand the need to give both scholarly thoroughness and useful application to understudy learning.

I am proud to be part of an institution with a spectacle of fine blend of tradition and modernity.

ICETET -2021

International Conference on Emerging Trends in Engineering and Technology

Keynote Speakers

Dr.Ing. Giulio MANZONI

Owner and Director, microspace, Singapore

I am very pleased to be part of th ICETET-21 conference and to be able to share at this conference and with the scientific and technical community the experience of Microspace in developing space technologies and satellites. I hope that my talk will inspire new generations of engineers, researchers and enterpreneurs and will allow space to remain a place for discoveries and explorations for a sustainable future for mankind and nature on Earth and beyond.

Professor Seifedine Kadry

Noroff University College, Norway

The International Conference on Emerging Trends in Engineering and Technology (ICETET-2021) organized jointly by the Sandip Institute of Engineering and Management, Nashik and IFERP is focused on to the latest research and results of scientists (students, post graduate Students, Research Scholars, and post-doc scientists) related to Mechanical Engineering, Civil Engineering, Electrical & Electronics Engineering, and Computer Science & Engineering. The conference featured traditional paper presentations as well as keynote speeches by prominent international speakers who focused on related state-of-the-art technologies in the areas of the conference. It was a wonderful opportunity for delegates to gain quality input useful for their future research in the knowledge-based society. The conference papers being published in Scopus will be of great source of information to the academicians, scholars, and industrialists.

I congratulate the organizers and wish the conference a great success.

Professor Seifedine Kadry

Keynote Speaker
(ICETET-2021)
Noroff University College
Kristiansand, Norway

Dr. Vijay Tharad

Director Operations at Corporate Professional Academy for Technical Training & Career Development Andhra Pradesh, India

At the outset, I am happy to congratulate The Department of Mechanical Engineering , Sandip Institute of Engineering and Management Nashik, in association with Institute of Engineering Research and Publication (IFERP) for providing the young scientific brains an International platform for exploring Science and Technology, by which new innovations can be evolved in pursuit of their knowledge.

This is the way the world gets to know new innovating ideas, new technology which makes mankind rich and more knowledgeable than what we exist today. This is the most ideal way for our young Engineers to develop the habit of generating new ideas, apply technical knowledge investigating how to accomplish, apply three steps research, development necessary engineering, modelling to create prototype for fulfilment of their dreams on one side and to fulfil mankind needs on the international global level.

Such seminars empowers the Research scholar to write the Research paper in such manner that their thoughts, plans, path of carrying the research which result in success, and are well understood by reading the Research paper so that the research outcome can reach all over the globe for the benefit of mankind.

I feel my role today is very important in motivating all stake holders (Sandip & IFERP), and participants from international educational institutions and all academicians, who are continuously uninterrupted playing their role on 24*7 basis in making this beautiful world more progressive, dynamic, and wonderful heavenly place to live.

I having worked for half of the century in most distinguished Engineering industries of repute (TATA MOTORS, CATERPILLAR) associated with commercial vehicles, Diesel Engines, Diesel and Gas Generating sets and Heavy earth moving machines, had the opportunity to work with thousands of engineering personnel imparting them technical subject and product knowledge. I feel privileged that an opportunity is given to me to be a key note speaker on this occasion to share my thoughts with the participants.

My objective is to share some of my learnings on this occasion . In the past thousands of years, the world has undergone millions of changes as a process of scientific and technological developments by generations who lived on this planet. It was the result of those brains who dreamed, explored, researched and created inventions to shape the earth what it is today. Our present generation is blessed with ocean of knowledge in the form of written documents, thousands of educational institutions imparting knowledge to the young minds with excellent teaching methodologies and it is our duty to understand how we can create something unique through research.

My endeavour will be to guide the audience regarding the steps required to be taken by every single young brain to tap and produce what the customer wants through Research and development in multidisciplinary branches of knowledge. Meanwhile I wish very bright career and grand success to every participant.

ICETET-2021

International Conference on Emerging Trends in Engineering and Technology

Nashik, Maharashtra, 07th - 08th July, 2021

Organizing Committee

CHIEF PATRON

Dr. Sandip Kumar Jha, Chairman, Sandip Foundation's

PATRON

Prof. Pramod Ambadas Karole, Academic Facilitator, Sandip Foundation's
Prof. Ms. Mohini P. Patil, General Manager, Sandip Foundation's

CONVENOR

Prof. (Dr.) Dipak P. Patil, Principal, Sandip Institute of Engineering & Management (SIEM)

CO-CONVENORS

Prof. (Dr.) A. S. Dube, H.O.D,Department of Mechanical Engineering, SIEM

CO-ORDINATORS

Prof. (Dr.) L. K. Toke, Assoc. Professor, Department of Mechanical Engineering, SIEM
Prof. P. P. Kulkarni, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. A. K. Mishra, Assistant Professor, Department of Mechanical Engineering, SIEM

EXECUTIVE COMMITTEE MEMBERS

Prof. K. T. Phalak, Dean Administration, Department of Civil Engineering, SIEM
Dr. G. N. Shelke, Dean Research and Development, Department of Mechanical Engineering, SIEM
Dr. N. L. Bhirud, Dean Academics, Department of Mechanical Engineering, SIEM
Dr. S. P. Ahirao, Dean Project, Department of Civil Engineering, SIEM
Dr. K. L. Bidkar, H.O.D, Department of Civil Engineering, SIEM

Prof. H.R. Kulkarni, HOD, Department of Electrical Engineering, SIEM
Dr. Kamini C. Nalavade, H.O.D, Department of Computer Engineering, SIEM
Prof. Y. R. Risodkar, H.O.D, Department of Electronics & Telecommunication, SIEM
Prof. R. J. Nayak, H.O.D, ESH

ORGANIZING COMMITTEE

Prof. S.J Chede, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. T. D. Patil, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. S. M. Mahajan, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. K. U. Shinde, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. P. M. Sutar, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. A. P. Borhade, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. C. R. Patil, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. S. B. Ambekar, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. K. D. More, Assistant Professor, Department of Mechanical Engineering, SIEM
Prof. S. E. Bodke, Assistant Professor, Department of Mechanical Engineering, SIEM

NATIONAL ADVISORY COMMITTEE

Dr.Shailndra K.Shukla, Professor, IIT BHU
Dr.Gajanan K.Kharate, Principal, Matoshri college of Engineering Nashik
Dr. S.S.Pardeshi, Professor, BOS Chairman - Mechanical SPPU Pune University
Dr. A.G. Thakur, Director, Sanjivani COE Kopargaon
Prof.(Dr.) V.P.Wani, Professor and Principal, BKC'S MET COE
Dr. S.T.Gandhe, Principal, Sandip Institute of Technology and Research Centre, Mahiravani, Nashik.
Dr. M. V. Bhatkar, Principal, Jawahar Education Society's Institute of Technology, Management & Research, Nashik
Dr. Kailas Chandratre, Principal, LGMIEER,Nashik
Dr. S. P. Shekhawat, Prof. & Vice Principal, S.S.B.T.C.O.E.T, Jalgaon
Dr. R. R. Gawande, Associate Professor & Workshop Superintendent, B.D.C.O.E Wardha
Dr. Pradip D. Jadhao, Professor & Head of Civil Engineering Department, K.K.W.I.E.E.R, Nashik
Dr. Ammar Muthana, Professor,St. Petesburge University of Telicommunication, St. Petesburge University of Telicommunication
Dr. Svetlin Antonov, Asst. Professor, Technical University of Sofia
Dr. Mukesh D. Patil, Principal, RAIT,Navi Mumbai

TECHNICAL COMMITTEE

Dr.J.H.Bhangale, Head & Professor, Matoshri college of Engineering Nashik

Dr. P. M. Yawalkar, Associate Professor, Department of Computer Engineering, MET's Institute of Engineering

Dr. M. R. sanghavi, Head & Professor, SNJB's College of Engineering, Chandwad

Prof. Anil S. Maheshwari, Assoc. Dean S.O.E.T, Sandip University, Nashik

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

ICETET -2021

International Conference on Emerging Trends in Engineering and Technology

Nashik, Maharashtra

07th - 08th July, 2021

ABSTRACTS

ICETET-2021

Organized by:

Department of Mechanical Engineering

Sandip Institute of Engineering and Management, Nashik

In Association with

Institute For Engineering Research and Publication (IFERP)

Design and Performance analysis of Rectangular Patch Antenna for Ku band applications

A.Suneel Kumar, Research Scholar, Dept. of Instrument Technology, Andhra University, Visakhapatnam, A.P, India
Dr.Y. Srinivasa Rao, Professor and Head of the dept. Dept. of Instrument Technology, Andhra University, Visakhapatnam, A.P, India
A. Kamala Kumari, Asst. Professor, Dept. of Instrument Technology, Andhra University, Visakhapatnam, A.P. India.

Abstract:--

The Microstrip patch antenna has attracted much attention towards the research because of its light weight, compact, inexpensive and are capable of maintaining high performance over a wide range of frequencies are preferred. In this paper, an attempt has been made to compare the performance of graphene, silver nanoparticle ink and Multi-walled CNTs (MWCNTs) used for patch antennas with the traditional copper patch antenna. The rectangular patch is designed and simulated to evaluate various parameters like return loss, VSWR, radiation pattern, gain, band width and 3D polar plot using Ansoft High Frequency Structure Simulation (HFSS) software. FR-4 with relative permittivity of 4.4 and dielectric loss tangent of 0.02 is used as a substrate for the antenna. The designed rectangular microstrip patch antenna is analyzed using transmission line feed technique at 13 GHz range. Various parametric results show that graphene, silver nanoparticle ink (silver NP ink) and MWCNTs patch are similar to copper patch providing a comparable voltage standing wave ratio (VSWR) and radiation pattern further there has been observed an increase in return loss, gain and band width of graphene and silver NP ink. Thus, the above materials can be good alternatives to copper conductive patch antennas.

Keywords-

Patch antenna, HFSS, Silver nano particle ink, Graphene.

Designing C Library for MODBUS-RTU to CANBUS & MODBUS-TCP IOT Converters

Abhay Sharma, Department of Electronics and Communication Engineering Institute of Technology, Nirma University, Ahmedabad, Gujarat, India
Shruti Airan, Department of Electronics and Communication Engineering Institute of Technology, Nirma University, Ahmedabad, Gujarat, India
Dhaval Shah, Department of Electronics and Communication Engineering Institute of Technology, Nirma University, Ahmedabad, Gujarat, India

Abstract:--

The IOT converters have made the communication between different devices working on different protocols very easy and convenient. This paper deals with designing a C library for two IOT Converters in which one device is working on MODBUS RTU to CANBUS protocol conversion and the other is working on MODBUS RTU TO MODBUS TCP/IP conversion, also implementing the same on the hardware. Creating a C library for establishing such communication involves socket programming which deals with setting up both wired & wireless communication. This paper covers the basic understanding of various serial communication protocols, their working and implementing the same at the hardware level. Here we have laid down the flow of the converter diagram and also mentioned the algorithm for creating a C library. Working on the Modbus and Can protocols has proven beneficial given the capability of Modbus to support multiple device on the same cable and capability of CAN to replaces the complex wiring system used in automobiles with an easy two wire centralized bus system. In the end, we have discussed the applications of these types of converters in real life and also compared them with any general IOT converters.

Keywords –

IOT Converters, MODBUS, CANBUS, C Library, Socket Programming, Serial Protocols.

Flower Pollination based MPPT Algorithm for Integrated DC-DC Converters

Abhishek Singh, Student, Dept. of Electrical Engineering, Delhi Technological University
Sambhav Khatri, Student, Dept. of Electrical Engineering, Delhi Technological University
Sumit Kumar Gola, Student, Dept. of Electrical Engineering, Delhi Technological University
Shreyansh Upadhyaya, Assistant Professor, Dept. of Electrical Engineering, Delhi Technological University

Abstract:--

The Solar energy is utilized fully when the maximum power point tracking controllers are attached to the photovoltaic system.A maximum power point controller is a DC-DC controller which acts as a feedback between the solar array and our electrical grid. Boost Converter is also used to get a maximum boosted voltage at the output side. Some traditional controllers like P&O does not successfully track the MPP point and follows local maxima instead of global maxima, so modern meta-heuristic techniques are used to track the MPP point with high efficiency and minimum power loss. Hence our paper proposes a novel method of tracking the MPP point i.e 'Flower Pollination Algorithm' and the convergence of the algorithm is increased by Levy flight method. The PV system and the MPPT controllers were simulated in MATLAB/SIMULINK. The FPA algorithm is compared to other well established traditional MPPT method known as P&O algorithm. The results of MATLAB simulation show that the proposed modern technique tracks the MPP point more accurately under external environment.

Index Terms

Photovoltaic model, MPPT Controllers, Flower Pollination Algorithm, P&O/Hill Climbing Method

Identification and evaluation of barriers in introducing Electronic Health Records in India

Aman Pundhir, Delhi Technological University
Saurabh Tiwari, Delhi Technological University
Rubal Sharma, Delhi Technological University
Girish Kumar, Delhi Technological University

Abstract:--

There is a worldwide movement towards enhancing the health care services using technologies such as Electronic Health Record (EHR), artificial intelligence, machine learning, etc. Developed countries have incorporated EHR and artificial intelligence into their health care sector which has led to improved decision making for clinical services providers. However, unlike developed countries, India has not been able to implement EHR for its entire population. The population in India is spread across rural, semi-urban and urban landscapes which has led to increased gaps in the way population receives health care services across a gamut of diseases and also making it more difficult to introduce EHR across the entire population. In this paper, various barriers are identified through literature survey and interaction with industry experts. Further, DEMATEL (Decision making trial and evaluation laboratory) is used to evaluate those barriers. The DEMATEL approach identified the most prominent barrier and also established interactive relationships among the barriers and categorized them into cause and effect groups. Based upon the DEMATEL analysis, it was observed that Interoperability barrier and technological barrier are the most prominent barriers. The results obtained would help decision makers in making reformed decisions that would help in accelerating the process of introducing EHR in India.

Index Terms

Barriers, Decision making, DEMATEL, EHR

Subscription Management

D.BalaKrishnan, Assistant professor, Computer Science and Engineering, Kalasalingam Academy of Research and Education,Virudhunagar,India
C.Narasimha, Computer Science and Engineering, Kalasalingam Academy of Research and Education,Virudhunagar,India
B Mohammad Azzam, Computer Science and Engineering, Kalasalingam Academy of Research and Education,Virudhunagar,India
B.Swachith Reddy, Computer Science and Engineering, Kalasalingam Academy of Research and Education,Virudhunagar,India

Abstract:--

A web application which provides users the capability of paying and managing their subscriptions. The users of this application can manage their subscriptions, like storing all the platforms that what they have subscribed. And this application shows all the list of subscriptions with necessary details that the user is currently undertaking. Reminds the user of a subscription payment as they are to the date of payment. And also it shows some analytic where the user transactions can be categorized by the frequency of payments – daily, monthly, weekly, yearly etc and the business type. (example: Amazon, Flip cart for e-commerce, Netflix for entertainment etc.

Wound Rotor Machine Fed by A Single_Phase Grid and Controlled By an Isolated Inverter

Rupavath Aruna, M.TECH Student, Department of Electrical and Electronics Engineering, Kakatiya Institute of Technology and Science, Warangal, India
Bathula Reshma, Assistant Professor, Department of Electrical and Electronics Engineering, Kakatiya Institute of Technology and Science, Warangal, India

Abstract:--

This mission proposes a singular electricity conversion machine for variable pace drive. It includes a wound rotor device and an inverter with none rectifier and input filter. In the proposed machine. The stator of the gadget is without delay connected to a unmarried-phase grid and the rotor is hooked up to three_ phase inverter remote with any external electricity source. In this venture, based totally on the nice and bad series model, the rotor, stator powers, and the torque functionality inside the rotor energy stability and unity grid energy element are analyzed. Minimum copper loss control of a single-phase grid related wound rotor system over complete velocity variety. This mission proposes manage algorithms for the minimum copper loss (MCL) operation of a single section grid tied wound rotor system. Since the energy provided from the single section grid is pulsating and machine is immediately linked to grid. The device can begin, accelerate, and slow down within the huge variety.

Index Terms

Energy conversion system, variable speed drive, vector control, wound rotor machine.

Drowsiness detection using light framework

Amit Pratap Singh, Information Technology, Delhi Technological University, New Delhi, India
Ritu Agarwal, Information Technology, Delhi Technological University, New Delhi, India
Chirag Gupta, Information Technology, Delhi Technological University, New Delhi, India
Himanshu, Information Technology, Delhi Technological University, New Delhi, India.

Abstract:--

People must be aware that to be at their best, they have to be at least awake. However, if one operates a vehicle despite being tired or out of concentration, they are not at their best— moreover, they are endangering themselves. Human fatigue could, at times, become a severe problem that can hamper the protection of travelers. Nearly every fifth case in more than 200 significant investigations completed between year 2000 to 2010 claimed driver fatigue as a ground, decisive issue, or a finding as part of the investigation. In this research, we compare and propose a machine learning-based solution that can detect drowsiness in drivers efficiently and in real-time.

Keywords

Drowsiness Detection, Random Forest, SVM, Cross-Validation, Scikit-learn, Computer Vision, DLIB

Smart Shopping Trolley for Blind

K. Jeyapiriya, Assistant Professor, Department of ECE, Sri Sairam Engineering College
Christina D, UG Student, Department of ECE, Sri Sairam Engineering College
Asha Farveen K N, UG Student, Department of ECE, Sri Sairam Engineering College
Vaishali G, UG Student, Department of ECE, Sri Sairam Engineering College

Abstract:--

This project helps the visually impaired people in collecting their groceries. Raspberry pi is deployed in the robot module (trolley) along with RFID reader, headset, motors. The voice of the person (section where the person wants to go) is taken as input and this input is communicated via Bluetooth to Raspberry pi. According to the requirement, the Raspberry will provide the command to driver IC, which in turn will drive the motors to that particular direction. In the section, all items will have RFID tags. Whenever an item is picked and dropped into the trolley, the RFID reader will detect (read) the tag. This will be communicated to Raspberry Pi and the Raspberry Pi will provide audio output (item name and its price) through headset to the person. Also, all the items that are in trolley are recorded in IOT and are printed at the bill section. Obstacle detection is also done using the Ultra-sonic sensor for the blind person to move on.

PIDroid: Android Malware Detection using Permissions and Intents

Gourav Garg, Department of Applied Mathematics, Delhi Technological University, Delhi, India
Ashutosh Sharma, Department of Applied Mathematics, Delhi Technological University, Delhi, India

Abstract:--

In recent years, there has been a huge increase in malware attacks on the Android platform. These attacks pose a number of major threats which can lead to financial losses, information leaks, and damage to the system. About 25 million smartphones have been infected with malicious software during the first half of 2019 which describes the gravity of those attacks. Considering how dangerous the Android malware is to the user's community. We aim to develop "a static Android malware detector named PIDroid that analyses Permission and Intent for malware detection". In this work, first, we find the permissions and Intents that are frequently present in normal and malicious apps and rank these features based upon their frequency in normal and malware datasets. Additionally, we applied different support thresholds to remove the unnecessary and redundant features from the rankings. Finally, a novel algorithm is proposed that applies machine learning classifiers on the ranked features consisting of permissions and Intent features to detect Android malware.

Index Terms

Mobile Network, Mobile Security, Mobile Privacy, Mobile Malware Detection.

Reviewing suitable supervised clustering algorithm for enhancing effective customer segmentation

Gurunanje Wodeyar
Hari Prasad, R
Hemanth Kumar K
Jallepalli Nithin
Jambapuram Neeraj Kumar Reddy
Prof Poornima.S

Abstract:--

Customer Segmentation is one, of the best marketing strategy in making a good relationship with the customers. By customer segmentation we will able to know the customer opinion or loyal behavior towards the product. Nower days the companies do not do the customer segmentation and the relationship with customers is not good, even if they have good products. By this segmentation we can find the customer values and these values helps the company to improve their marketing skills and will be able to gain the profit. Identification of customer criteria in cluster formation based on RFM (Recency, Frequency and Monetary) values called clustering. This grouping method uses the K-Means Clustering algorithm. We will also be using DBScan Clustering and Mean Shift algorithm to compare which algorithm will give better accuracy regarding the dataset. Stream lit will be used for deployment process where company people can see their customer segmentation visually.

Keywords:

Customers, Customer Segmentation, Clustering, K-Means Algorithm, RFM, Elbow Method, DBScan, Spectral Clustering

Exploring Novel Adversarial Attack Strategies on Android Systems

Harshit Pandey, AISSMS IOIT, Pune
Aditya Mankar, AISSMS IOIT, Pune
Vivek Wagaj, AISSMS IOIT, Pune
Arnab Bit, AISSMS IOIT, Pune
Dr. K. S. Wagh, AISSMS IOIT, Pune

Abstract:--

As the proliferation and adoption of mobile phones becomes more and more common, so do the targets for malicious hackers, especially on the widely used android platform. Even the most secure anti-malware systems do not stand a chance against some of the attacks that malware authors develop, despite using machine learning based methods to thwart such attempts. Therefore, to evaluate the vulnerability of machine learningmodels, we propose two attack scenarios, the first based on reinforcement learning techniques and the second on a deep learning technique, that will perturb malicious samples to appear benign. This will in turn yield greater rate of misclassification. To further distinguish these adversarial examples, we propose one defensive scenario that will help make these classification models more robust against such attacks. We will use three publicly available datasets to benchmark our models.

Index Terms-

Adversarial Attacks, GAN, Reinforcement Learning,Android Applications, Drebin, Genome, Contagio

Elderly Care Application

Jayashri Ghorpade, Student, MIT Polytechnic, Pune
Prof. Prerna Patil, Professor, MIT Polytechnic, Pune
Shwet Pathak, Student, MIT Polytechnic, Pune
Muizz Shaikh, Student, MIT Polytechnic, Pune

Abstract:--

In these uncertain times of the pandemic, the worst hit are the elderly. They are left stranded in their houses without basic supplies and with no means to venture outside in the harsh conditions. Taking in consideration the post pandemic situation it is necessary to provide all essential services to the elderly at their doorstep. Also, this is a pre existing problem and to answer this need, an approach for the integration of services from various providers, advantaging on collaboration to supply better personalized and evolutionary care services for elderly, is proposed. We intend to serve the senior citizens and provide them with every essential commodity and service from the comfort of their homes. Providing first aid to address emergencies and easy contact with local doctors and specialists. Pill reminder facilities to ensure the pills are taken on time. A ride hailing facility to ensure a safe and a smooth ride to the destination.

Keywords:

color blind assist, doctor consultation, elderly care, Multilanguage support, pill reminder, web application.

Assessment of present and future drought condition for the district of Bankura, W.B

Kush Kumar Dey, Research Scholar, National Institute of Technology Durgapur, India
Dr.Vijay Kumar Dwivedi, Professor, National Institute of Technology Durgapur, India
Dr. Satanand Mishra, Sr. Scientist, CSIR, Advanced Materials Processes Research Institute, Bhopal, India

Abstract:--

The research has observed that the frequency of drought is increasing trend in last few decades. In future drought projection, the distribution pattern of rainfall and temperature contributes an vital role in climate change. Here we analysed the data from five Global Climate Models (GCMs) that related with the Coupled Model Intercomparison Project-5 (CMIPS5) to estimate the changes in future drought of Global Warming changing climate. Our observation finds more frequent drought in the changing climate in the near (2011-2040), mid-century (2041-2070), and end of 21st century (2071-2100) period using SPEI whereas; the drought projections based on SPI show a decreasing drought frequency. Research also observed that drought area is decreasing whereas; the of drought intensity is increasing using SPEI values. The change in drought frequency is projected to increase by more than four-five severe droughts per decade using SPEI value. This goal of the study is assessment of future drought using the model of five Global Climate Models (GCMs) in the Coupled Model Intercomparison Project (CMIP5) over the district. The study were characterised under the RCPs (Representative Concentration Pathways) 2.6, 4.5, and 8.5 i.e. the 2020s; 2011-2040, mid-century (2050s; 2041-2070, and the end century (2080s; 2070-2100). The study were compared the value of Standardized Precipitation Index (SPI) and Standardized Precipitation-Evapotranspiration Index (SPEI) and the SPEI was used to measure the future drought as it showed vital changes due to its inclusion of the changes of temperature effects. The results provide us important knowledge for identification of reason, minimizing the impact of droughts in the district.

Key words:

Assessment of drought, Standardised Precipitation Index, Standardised Precipitation Evaporation Index, Climate Change, district Bankura.

Performance Evaluation of Different Tree-Based Regression Approaches For Forecasting Energy Prediction in Wireless Sensor Network Scenario

Monalisa Rath, Department of Electronics and Instrumention Engineering, College of Engineering and Technology, Odisha, India
Rashmita Routray, Department of Electronics and Instrumention Engineering, College of Engineering and Technology, Odisha, India
Rajesh Kumar Ojha, Faculty of Science, Sri Sri University, Odisha, India

Abstract:--

This paper focuses on the systematic modeling of energy consumption using different regression approaches. Data utilized include measuring temperature and humidity sensors and other external factors such as wind speed, visibility and dewpoints. from a wireless sensor network to predict the energy consumption. This work compares different regression approaches with three tree-based models: Extra Tree, Light Gradient Boosting machine, Random Forest with five-fold crossvalidation, employed in this work. We observed from the training and testing experiments that the Extra Tree Regression gives better performance depicting RMSE 64.88 and R2 0.59 from the energy data set than other Machine Learning Regression models. The weather data also includes wind speed, and atmospheric pressure is inter-related to each other. We identify the causal factors for energy prediction in a wireless sensor network deployed in a smart home by taking heterogeneous data.

Index Terms

Appliances, Energy consumption prediction, Wireless Sensor Network, Ensemble regression approaches.

Spam Review/Comment Detection and Removal Using Deep Learning

Hardika Thakur, Student, Dept. of Computer Engineering, MCT's Rajiv Gandhi Institute of Technology, Mumbai, Maharashtra, India
Anuradha More, Student, Dept. of Computer Engineering, MCT's Rajiv Gandhi Institute of Technology, Mumbai, Maharashtra, India
Mrunal Kashte, Student, Dept. of Computer Engineering, MCT's Rajiv Gandhi Institute of Technology, Mumbai, Maharashtra, India
Dr. Jyoti Deshmukh, Assistant Professor, Dept. of Computer Engineering, MCT's Rajiv Gandhi Institute of Technology, Mumbai, Maharashtra, India

Abstract:--

Reviews are every customer's individual opinion regarding products they bought from the e-commerce website. There are cases where the company's management team attempted to get positive reviews about the product to increase sales of the product, they give good reviews for many different products manufactured by their firm itself. Whereas on the other hand there were also attempts to degrade a genuine product of a competitor's company. It is noticed that a huge number of duplicate reviews are written by the same users on one single product and also different products. Recognizing such reviews is an important but challenging problem. Nowadays, most customers check reviews about a product before spending their money on a product that they wish to buy. So, people come across various reviews on the website but these reviews are genuine or fake that cannot be identified by the user. To find out fake reviews from the website this "Spam Review/Comment Detection and Removal using Deep Learning" system is introduced.

These reviews are also important in terms of the future progress of the e-commerce website as these reviews help to overcome the negative aspects of the e-commerce website. This system will be able to detect the fake review with the help of Deep Learning techniques such as recurrent neural networks (RNNs) with long short-term memory (LSTM) and Global Vector (GloVe) embedding.

Index Terms

RNN, Embedding, Fake, Genuine, LSTM, RNN, Reviews, Spam, Tokenization

Cloud Based Plant Disease Detection System

Sanjay Patidar, Department of Computer Science and Engineering, Delhi Technological University
Nikhil Kumar Meena, Department of Computer Science and Engineering, Delhi Technological University
Rajiv Ranjan, Department of Computer Science and Engineering, Delhi Technological University
Ritesh Rai, Department of Computer Science and Engineering, Delhi Technological University

Abstract:--

In the current era of modern generation, India's economy extremely relies on the cultivating outcomes and agricultural production. To improve the knowledge of farmers, we need to identify and detect diseases in the crops. It turns out to be significantly significant, on the grounds that it is exceptionally normal for plants out there in the fields to get influenced by assured bacterial or parasitic infections. If not managed at the soonest, this may end up being a calamity for the item quality and amount, and one may state profitability generally. To achieve better productivity at this objective, Machine Learning ideas can be useful, instead of just by pictorial sightings and acknowledgment. Simultaneously, we also need an application which has Machine Learning modelled into it for disease detection and recognition. Three illnesses were basically cantered around specifically leaves having Brown spot, Bacterial leaves, and Leaf smut. The accompanying report presents the worldview for the identification and order of sicknesses in rice plants, and one of the significant yields of the Indian primary eating regimen, utilizing the pictures of polluted rice plants [1]. Residual Network can generate more accurate results as compared to normal CNN layered model as it gets first pre trained on imagenet dataset which train this model so that it can classify images more accurately. Through transfer learning concept any dataset can be applied on pre trained ResNet-50 model by using its top layer which is responsible of classifying outputs.

Index Terms

ResNet50, Machine Learning, CNN, Rice Plant Disease and Data.

Institute Recommendation System Based on Weighted Average Algorithm and Machine Learning

Rinky Chhabra, M.Tech. Student, Department of Technology, Savitribai Phule Pune University, Pune, India
Nitin Patil, Assistant Professor, Department of Computer Science, Savitribai Phule Pune University, Pune, India

Abstract:--

The Internet has become a fundamental prerequisite for anyone who uses the Web in any area. With the exponential growth in social network usage, citizens utilise these sites to share their views on everyday issues. Gathering and evaluating people's reactions to purchasing a commodity, public facilities, likewise are important. Sentiment analysis is also known as opinion mining is one such methodology which discovers sentiments behind the opinions expressed in the text on a range of subjects or products. In recent decades' researchers has been engaged in evaluating views on various subjects such as film, consumer goods, everyday society problems, e-commerce items, and even service scores. This lead to the creation of Recommendation Systems.

In this paper, the author had focused on one of those aspects of the Education Institute Recommendation System, which would make it simpler for students or parents to select the best form of educational institutions to pursue their education. The author promote the usage of machine learning techniques to build guidance systems. This educational institution recommendation method would not only help to choose the best institution based on the ratings but can also help to collect the aggregate details of all the ratings of the relevant institute.

Keywords

Recommendation System, Sentiment Analysis, Natural Language Processing, Education Institutes, Review Summarizer

Spam M ail Detection utilizing M achine Learning

Mohd Anzar, Student,Bachelor of Technology, Galgotias University, Greater Noida, India
Abhinav Pandey, Student,Bachelor of Technology, Galgotias University, Greater Noida, India
Rishav Tiwari, Student,Bachelor of Technology, Galgotias University, Greater Noida, India

Abstract:--

Email Spam has become a significant issue these days, with Rapid development of web clients, Email spams is additionally expanding. Individuals are utilizing them for unlawful and unscrupulous behaviors, phishing and misrepresentation. Sending malignant connections can hurt our framework and can also look for into your framework which are sent through spam messages. It's easy for spammers to make a phone profile and email account, which could be portrayed as a real individual in their messages, they mostlyfocus on those users who don't know about these fake accounts. That's the reason, it's necessary to identify those spam messages which are misinterpreted. And this can be doneby utilizing strategies of AI, this report will mention AI calculations and its application on the data collected and the best calculation is chosen for the email spam identification having the best exactness and precision.

Handwritten Digit Recognition Using Machine Learning Algorithms

Dr. Rajesh Kr. Yadav, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India
Risabh, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India
Ritika Jaiswal, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India

Abstract:--

The recognition of handwritten digits is one of the most important issues in the applications of Pattern Detection and Image recognition. Handwritten digits are used in various applications in the modern world including data entry in forms, processing of back checks, sorting the postal mails, many more. With a wide variety of usage of handwritten digits in today's world, the problem to develop a system that identifies handwritten characters flawlessly and effectively is of immense importance. In this paper, we develop a handwritten character recognition system using various classifiers and compare and contrast the efficiency of the classifiers to recognize handwritten characters. The classifiers are trained and tested on the data obtained using the MNIST repository which has more than 60,000 digits. The approaches used for developing a handwritten digit recognition system includes Multilayer Perceptron, Support Vector Machine, Decision Tree classifier, Random Forest, Random Tree, Bayes Net and Naive Bayes classifier. The primary objective of this paper is to identify the most effective classifier for recognizing handwritten digits.

Index Terms

Multilayer Perceptron, Support Vector Machine, Random Forest Classifier, Bayes Net, Naive Bayes, Random Tree, Decision Tree, KNN.

Web Application for Molecular Solubility Prediction Using Machine Learning and Streamlit Framework

Ram Murti Rawat, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India
Prateek Khare, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India
Rohan Shekhar Paunikar, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India
Praveen Kumar Tiu, Dept. of Computer Science Engineering, Delhi Technological University, New Delhi, India

Abstract:--

In this paper, the idea of building up a Web - based application to predict Molecular Solubility of any chemical compound or drug at standard temperature and pressure from the SMILES of the chemical using Molecular descriptors like Partition Coefficient (Log P), Aromatic Proportion, Number of rotatable bonds and Molecular weight as main attributes and by using Machine learning and Streamlit framework for creating web app is executed. The Streamlit based Web Application has mainly two modules to make the entire task coordinated and work along. One will be the Machine learning model that will work at the backend and will be used for generating Molecular Solubility (Log S) value of the chemicals by taking the input values as Partition Coefficient (Log P), Aromatic Proportion, Number of rotatable bonds and Molecular weight. Second module is the web application made to take input as SMILES of chemicals from users, then calculate above-mentioned Molecular descriptors or attributes and pass them to the Machine learning model at the backend. Then display the output (Molecular Solubility) to the user. The app is carefully designed so that only authentic users can only use the app after logging in or by creating a new account. All the user data is kept secure at the local machine in a database.

Keywords

Molecular Solubility, Aromatic Proportion, SMILES, Machine Learning, Web Application, Streamlit

Design and Implementation of High Step-up Interleaved Converter with VSI

S.R.Akshaya, Assistant Professor, Velammal Engineering College
N.Kasirathi, Assistant Professor, Velammal Engineering College

Abstract:--

The Interleaved converters are widely employed in photovoltaic systems. The main advantage is low conduction losses, low cost and high voltage gain. The high step-up interleaved converter with VSI proposed in this project is used to boost the output power from the PV source to the load with high step-up gain without operating at extreme duty ratio. High voltage is obtained by the voltage multiplier module of interleaved converter composed of switched capacitors and coupled inductors. The boosted output voltage is fed to the R load through single phase voltage source inverter. The simulation of interleaved converter is carried out in MATLAB/Simulink.

Index Terms

PV system, Interleaved Converter, Voltage multiplier module, Voltage Source Inverter.

UAV Based Early Forest Fire Detection System

Sagar Sajeev, Electronics and Communication Engineering, Amrita Vishwa Vidyapeetham, Amritapuri, Kollam
Navaneeth Krishna S, Electronics and Communication Engineering, Amrita Vishwa Vidyapeetham, Amritapuri, Kollam
Akshay A, Electronics and Communication Engineering, Amrita Vishwa Vidyapeetham, Amritapuri, Kollam
Geethu R S, Asst. Professor(Sr.Gr.), Department of ECE,Amrita Vishwa Vidyapeetham, Amritapuri, Kollam

Abstract:--

Fire accidents are one of the most dangerous and hazardous hazardous activities which occurs without our consciousness. The statistics of fire hazards occurring over the past decade has shot up because of several external and man-made reasons but even the nature plays an equal role in it.The Fire detection and aversion is possible in areas with proper infrastructure and impeccable resources but, it remains a severe challenge in rural neighbourhoods and large Forest covers. Forest Fires in India correspond to the largest number of fire accidents occurring every year. Hence, to avert the threat of forest fires we intend to introduce a novel method of fire detection using Fixed wing type unmanned aerial vehicle which uses an First person view camera integrated to the fuselage and the microprocessor based system uses several pre-processing techniques as well as Computer vision package for detection of forest fires furthermore, with help of a ground station it will timely alert the officials stationed at the applied area.

Index Terms

Communication Bridge, Coverage Path Planning, Detection Algorithm, Fixed-Wing, Ground Control Station, Image Processing, Mission Planner, Navigation, Unmanned Aerial Vehicle

Facial Recognition Based Attendance System

Shahid Eqbal, Department of Electronics and communication Engineering Galgotias College of Engineering and technology, Greater Noida, India
Abhinav Verma, Department of Electronics and communication Engineering Galgotias College of Engineering and technology, Greater Noida, India
Aditi Karsouliya, Department of Electronics and communication Engineering Galgotias College of Engineering and technology, Greater Noida, India
Anjali Mehta, Department of Electronics and communication Engineering Galgotias College of Engineering and technology, Greater Noida, India

Abstract:--

The face is the key feature of identification of a person. And there are so many methods to exploit the system. This paper solely aims on the Face Recognition technique to maintain the authenticity of the person. In facial recognition we verify any person by their face. It captures the data and then analyzes and co relate person's facial aspects. Face recognition is in trend nowadays because of the availability of feasible technologies after years of research. In these times this system is treated as the most anticipated of all biometric systems. We recognize ourselves not by our fingerprints or eye but by looking at our face. Considering all the above mentioned points and their implications we've tried to realize some experience with some of the commonly available face recognition algorithms and make our Facial attendance system more effective.

Index Terms—

Haar Cascade Classifier, LBPH face recognizer, Xampp.

Movie Recommender System Addressing Data Sparsity through Collaborative Filtering

Shikhar Saini, Computer Science Deparment(8th semester student), SRM Institute of Technology, India
Kislaya Sinha, Computer Science Deparment(8th semester student), SRM Institute of Technology, India
R. Lavanya, Faculty of Computer Science Deparment, SRM Institute of Technology, India

Abstract:--

The Recommendation systems are like backbone of many E-commerce businesses. Movie & OTT platforms such as Netflix, Amazon Prime, and many others are always trying to further optimize their recommender systems and hence, different organization have been trying to tackle issues that recommender systems has to faces. Due to this numerous different techniques and models are present in today's market for recommendation system. In this paper, we are trying to address these different techniques of recommendation, particularly the Collaborative filtering techniques, by studying and comparing various models already present in the market.
We would also look at different tests that are used to measure the credibility of recommender systems. Metadata from Movielens and IMDB would be used.

Keywords:

Recommendation System, Collaborative –filtering , Content-Based filtering , Data Sparsity, K-Means Algorithm, Dimensionality Reductions, Cosine Similarity, Hybrid– Filtering , SVD, Content-based(CB), Collaborative Filtering(CF)

Information Value Based Permissions Ranking in Normal and Malicious Android Applications

Siddhant Gupta, Discipline of Mathematics and Computing, Delhi Technological University, India
Siddharth Sethi, Discipline of Mathematics and Computing, Delhi Technological University, India
Srishti Chaudhary, Discipline of Mathematics and Computing, Delhi Technological University, India

Abstract:--

With more devices becoming Android centric, the malware affecting Android applications poses a serious threat to the security of the users using such devices. In this paper, we discuss a method which ranks permissions of Android applications based on their information value which will further help to identify the important permissions that are a major distinguishing factor between malware and normal applications. Further, we propose a model on consensus based blockchain which can help to predict whether an application is malware or not with better accuracy.

Index Terms

Blockchain, Intrusion Detection, Mobile Malware, Mobile Network, Mobile Security.

Comparative Study of Big Data Frameworks using Machine Learning Algorithms

Preetham Kulai, Department of Information and Communication Technology, Manipal Institute of Technology, Manipal University, Karnataka, India
Karthik Bhat, Department of Information and Communication Technology, Manipal Institute of Technology, Manipal University, Karnataka, India
Girija Attigeri, Department of Information and Communication Technology, Manipal Institute of Technology, Manipal University, Karnataka, India
Sucheta Kolekar, Department of Information and Communication Technology, Manipal Institute of Technology, Manipal University, Karnataka, India
Sreekumar Vobugari, Department of Information and Communication Technology, Manipal Institute of Technology, Manipal University, Karnataka, India

Abstract:--

In recent decades, there is an increase in the amount of data generated through a variety of sources. The generated data can be in diverse fields like mobile devices, aviation industry, social networks and the Internet of things. This generated data must be processed, and suitable Machine learning algorithms should be applied to get inference from the data. To process such vast amounts of data, Big Data frameworks were introduced, which helps to store, process and analyze the data. In this paper, we discuss the survey and evaluation of existing Big Dataframeworks such as Hadoop, Spark and Flink using the machine learning algorithms. The disk usage, CPU usage, execution time and RAM usage for the given big data frameworks are computed and compared. Lastly, we conclude on the best framework to be used for the given scenario on the study of comparison.

Keywords

Big Data, Frameworks, Machine Learning, Hadoop, Map-Reduce, Spark, Flink.

Effect of Al content on cyclic oxidation behavior of AlCoCrFeNi high entropy alloy

Sudeep Kumar T, Defence Institute of Advanced Technology, Pune
Ayush Sourav, Defence Institute of Advanced Technology, Pune
Rupesh Wankhede, Defence Institute of Advanced Technology, Pune
Shanmugasundaram T, Defence Institute of Advanced Technology, Pune

Abstract:--

Over the last decade, High Entropy Alloys (HEAs) have been extensively studied and found to exhibit better mechanical properties as compared to the conventional alloys. In the recent years, the oxidation resistance of various HEAs have been studied with alloys containing elements like Al, Ti, Co, Cr, Ni, etc possessing superior oxidation-resistant properties and high temperature strength than conventional polycrystalline superalloys. At some instances, these alloys have been found to show better oxidation resistance than Nickel superallloys. Amongst the HEAs, the equi-atomic dual phased AlCoCrFeNi alloy is the most studied one and has been reported for good mechanical properties at room temperature as well as elevated temperatures. Also, the oxidation resistance of AlCoCrFeNi HEAs has been studied by various researchers at different elevated temperatures. There have been instances where the AlCoCrFeNi alloy has shown better oxidation resistance than some of the well-known high temperature superalloys.

The present study evaluates the cyclic oxidation behavior of AlCoCrFeNi HEA system which consisted set of three HEAs with varying atomic percentage of Al such as $Al_{0.3}$, $Al_{0.5}$ and $Al_{0.7}$. These samples were synthesized by vacuum arc melting and subjected to cyclic oxidation test at $1100^{O}C$ for 20 cycles. The results indicated that the alloy with $Al_{0.7}$ content has shown better oxidation resistance. This is ascribed to the formation of stable Al_2O_3 layer on the surface by the diffusion of sufficient Aluminum onto the surface thereby protecting the specimen from further oxidation. It is concluded that the oxidation resistance increases with increase in Al content.

Website heatmap prediction using Computer vision

Swapnil Kashyap, Department of Computer Science & Engineering, Delhi Technological University, Delhi
Saurabh Pandey, Department of Computer Science & Engineering, Delhi Technological University, Delhi

Abstract:--

We aim to develop a complete website heatmap prediction solution using computer vision and deep learning. Heatmap prediction is used for predicting the possible regions of user interest on a webpage. Our solution is the first end-to-end model for predicting the heatmap of a screenshot of a webpagewithin seconds.

Keywords

Generative Adversarial Networks (GAN), Click Through Rate (CTR), Optical Character Recognition (OCR), Computer Vision (CV), Deep Learning (DL), NN (Neural Network)

Organ Donation Application Using Blockchain Security

Vishram Sawant, Department of Information Technology Ramrao Adik Institute of Technology, Navi Mumbai, India.
Shivraj Gaikwad, Department of Information Technology Ramrao Adik Institute of Technology, Navi Mumbai, India.
Chetan Dhangar, Department of Information Technology Ramrao Adik Institute of Technology, Navi Mumbai, India.
Sujata Oak, Department of Information Technology Ramrao Adik Institute of Technology, Navi Mumbai, India.

Abstract:--

This paper gives a detailed report on the application available for tracking organ donors which helps to assist between various donors and necessitous people. It facilitates the search process for necessitous people and it will be effortless as well as time saving. With the development in healthcare services, Organ transplantation is increasing in demand so organ donation has become important. All this information needs to be available as to when required by the hospital and patients. There is a need for a uniform tool to maintain much medical-related information like organ transplantation requirement of organs in a different hospital. Organ donation is needed in the event of an organ transplant, an injury, or cancer treatment, among other cases. The manual organ donation method has a number of drawbacks, including the fact that it takes too long, frequently results in unreliable results, needs a lot of manpower, lacks donor knowledge, data retrieval takes a long time, and the percentage of accuracy is poor. It may be difficult to approach the correct donor in emergency. Rare blood groups and organs are not available all the time at all blood banks and recipients find difficulties to track the right donor. It provides elegant management of blood and organs, a list of hospitals, blood banks, and donors online.

Keywords:

Blood Bank, Donors, transplantation, technologies, report, Secure Organ Donation.

Hybrid Solar and Wind Power Generation with Grid Interconnection for Power Quality Improvement

Abhishek A. Gothe, PG Student, Department of Electrical Engineering, TGPCET, Nagpur
Prof. Radharaman Shaha, Head, Department of Electrical Engineering, TGPCET, Nagpur

Abstract:--

Power framework is truly outstanding and future one framework. In this framework, there is wind framework with nearby planetary group and diesel generator framework, which is capacity in one spot that is stockpiles (Batteries) and yield, gives age sources, small turbines framework utilized in crossover, implies association with battery, diesel-generator and photovoltaic framework. The breeze is a wellspring of free-energy, which has been utilized since old time. It is utilized of wind stream through wind turbine to give the mechanical capacity to transform into electrical force this framework for utilized by far off and off-network framework likewise, that wonder called crossover power framework. In some cases this mixture power framework otherwise called Green Energy. Blend of at least two sustainable power sources is more compelling than single. This is called as mixture framework. 'Crossover' signifies consolidate environmentally friendly power sources advancements. This innovations yield gives electric flexibly gets at home, on-network etc. Many mixture framework sources, which worked off-matrix framework, not associated with an appropriated framework from this framework, we put away the energy power stream in batteries. A blend of at least two sustainable power sources is more successful than a solitary is brought regarding cost, proficiency and dependability. Energy is the most significant factor for both modern and agribusiness advancement of any nation.

Keywords:

Hybrid, green energy, power quality improvement, THD.

Detection of Phishing Websites Using Convolutional Neural Networks

Vinay Surtani, Computer Department, AISSMS IOIT, Pune
Ritika Sahsani, Computer Department, AISSMS IOIT, Pune
Surabhi Kungare, Computer Department, AISSMS IOIT, Pune
Mrs.Prajwal Gaikwad, Computer Department, AISSMS IOIT, Pune

Abstract:--

Phishing Detection is an important aspect in cybersecurity due to the increase in the amount of cyber-attacks through various means such as websites, mails, online portals, etc. Over time, more effective phishing detection methods are required for improved cyber defense. We propose a One Dimensional Convolutional Neural Networks (1D CNN) model that checks whether the current URL passed to it is a phishing website of not, with the help of the UCI Phishing Web Site Dataset. We achieve this with the help of a Chrome extension which takes the URL from the browser and sends it to the model to predict the results.

Index Terms—

Convolutional Neural Networks, Machine Learning, Cyber Security, Phishing Websites.

Comparison of Automobile Recommendation System Using Various Machine Learning Algorithms

Adithya Krishna R, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India
Krishna S, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India

Abstract:--

In the modern world of the internet, choosing a product from a large dataset is very difficult. Here recommendation system helps the users to select the product that satisfies their needs.This paper belongs to the recommendation of automobiles. In the current scenario, most of the users have to visit different automobile showrooms or third party agencies to buy a used car. Sometimes the users may get cheated by the dealers. Here, we developed a recommendation system which recommends automobiles to users based on their needs. Using this recommendation system even a naive user can easily buy a used car. We have implemented the recommendation system using different algorithms and compared their efficiency. Accuracy, precision and recall of each algorithm differs. After evaluating the model's effectiveness, the result showed that the recommendation system applying the random forest method provided higher accuracy than other models. This shows that the random forest algorithm provides best accuracy as compared to other algorithms.

Keywords

Automobile Recommendation System, Random Forest, Accuracy, SVM, KNN

EXER-PAY

Akhil Thomas, APJ Abdul Kalam Technological University, Amal Jyothi College of Engineering, Kottayam – 686518, Kerala
Anakha Arun, APJ Abdul Kalam Technological University, Amal Jyothi College of Engineering, Kottayam – 686518, Kerala
Anu Punnoose, APJ Abdul Kalam Technological University, Amal Jyothi College of Engineering, Kottayam – 686518, Kerala
Ashin Johney, APJ Abdul Kalam Technological University, Amal Jyothi College of Engineering, Kottayam – 686518, Kerala
Anu Abraham Mathew, APJ Abdul Kalam Technological University, Amal Jyothi College of Engineering, Kottayam – 686518, Kerala

Abstract:--

Introducing gamification in fitness improves generating a genuine and vigorous participation in comparison to the conventional methods. Focussing in rejuvenation through exercise, the mundane pattern of exercising is ridden by introducing tasks and challenges to be accomplished invoking new trends to be created. To maintain and improve the health and fitness with an enthusiasm a cycling device, EXER-PAY is proposed in this paper. An IoT hardware implemented on the cycle measures the amount of cycling done and appropriately decides on the speed, calories burnt, and distance covered during cycling. The information measured is transferred to the database and then to the Android app to visually present the status for a user to keep track of the routine, patterns and progress. The VR headset worn by the person engaging in the activity gives an exposure to a gamified environment thus involving the person for better participation.

Index terms

Cycling, Exercise, Flutter, IoT, Virtual Reality.

Power of Quality Improvement using STATCOM with Renewable energy sources

Amruta Gaikwad, Department of EE Engineering, Abha Gaikwad-Patil College of Engineering & Technology, Nagpur

Abstract:--

Static Compensator (STATCOM) is a device that combines a voltage source converter and a renewable energy source to enhance static & dynamic voltage control in distribution & transmission systems. It's a power control that works with reactive power. In the electronic and electrical industries, power quality continues to play a significant role. Voltage flicker and harmonics are a device that can be used to calculate power efficiency. In most distribution systems, STATCOM is connected. The IGBT is a low-loss power switch with a quick turn-off. THD is calculated in this article, and STATCOM is used to minimize disturbances in voltage and current waveforms.MATLAB/SIMULINK is used to pretend and validate the distribution system with STATCOM as well as the control scheme for power quality enhancement.

Keywords:

PV system, DC to DC Boost Converter, STATCOM, UPQC, DVR, PQ.

A Review on Charging Methodology for Electric Vehicles

Anjali Gaikwad, PG Student, Department of Electrical Engineering, TGPCET,Nagpur,
Prof. Radharaman Shaha, Head of Department of Electrical Engineering, TGPCET, Nagpur.

Abstract:--

The "two" phase output is processed by using two standard single-phase PFC modules. Split diodes & inductors are used to reduce interaction between the two stages of PFC. On a universal experiment PFC prototype, the efficiency of the proposed PFC rectifier was assessed. Furthermore, a detailed analysis model is offered to calculate the power losses and efficiency of the converter for this topology. During this project, these research outcomes were developed and published in various technical papers. The cumulative interleaved DC-DC converter investigations are introduced in this research work. This optimization is done with the help of MATLAB 2018a..

Keywords-

DC To DC Converter Interleaved, Power Factor Correction (PFC), Inverter.

Smart Parking System using Android

Ankita Satav, Department of Computer Engineering, MVPS's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik, India.`
Bhumi Soni, Department of Computer Engineering, MVPS's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik, India.
Lalit Patil, Department of Computer Engineering, MVPS's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik, India.
Sairaj Nikam, Department of Computer Engineering, MVPS's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik, India.
Ms. D. L.Tidke, Department of Computer Engineering, MVPS's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik, India.

Abstract:--

In general countries the car parking issue is serious but in India it's particular. This issue is increasing with high extent & with exceptional growth in no. of cars, buses, trucks, other modes of transportation over the last few decades. In India, the real challenge is to find parking. There is very less availability of parking slots in the city area. To reduce the parking problems in congested areas this new system is helpful in many ways & reduce the issues found in less crowded areas in city. Furthermore, the parking slots which are provided in crowded area are not enough to satisfy the demand in crowded areas. This project usually focuses on a smart android based parking control application which helps to find parking area in nearby your location. This mobile application is also applicable to pay the online parking charge. There is a counter in this application that help you to count the time your car have parked in parking slot. It is also used to track the entire process & provides previous records.

Keywords:

Traffic Congestion, Parking Area, MAC address, Smart Android Based Mobile Parking Control Application, Location, Track.

Manual Clamping Replaced by Hydro-Pneumatic Clamping

Prof.Ashish.P.Borhade, Assistant Professor, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Tanuj Anil Jangale, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik.
Abhimanyu Ankush Pawar, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik.
Rutvij Shashikant Phalak, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik.

Abstract:--
The aim of this project is to design a hydro-pneumatic clamping system. A hydro-pneumatic clamping system utilizes both air and oil in its operation and gives higher outlet hydraulic pressure with lower inlet pneumatic pressure. This project mainly gives special importance on reduction of working time and labor cost. The working time should be minimized in order to increase the productivity of any industry. Labor cost reduction is also very important nowadays. Thus, there is a need for automation. This study is to replace the traditional manual clamping with hydro-pneumatic clamping.

Keywords: -
Hydro-pneumatic, Clamping,Increased Production, Accuracy.

Single Phase PWM Rectifier Is Method Of Converting AC/DC In Charging System For Electrical Vehicles

Ashlesha B Mali, PG Student Electrical Engineering Department GCE karad
Prof K. K. Morei, Assistant Profesor Electrical Engineering Department GCE Karad

Abstract:--

The main aim of this project is to assume a model of efficient and simple single phase AC charging system for electrical vehicle (EVs), by using AC/DC converter is a PWM rectifier. This paper is reported PWM boost rectifier system using IGBTs. This rectifier has feature of providing the desirable boost in D.C output voltage and still maintaining the unity power factor at the input side with low %THD (<6%), Power factor correction is attained here by making the input voltage, current in phase and almost same shaped. Pulse width modulation method is used for switching of IGBTs in selected topology. For boosting the output voltage firing scheme will required in phase shifting circuit. The control methods of single-phase PWM rectifiers are deadbeat current control method is adopted. The feasibility and effectiveness of the proposed topology is verified under MATLAB/SIMULINK software. This simulation result was proposed by the given control strategies are comparing to those using the most used method in the literature.

Index Terms

Single phase PWM rectifier, Total harmonic distortion, power factor.

Power Electronics Based Energy Management System with Storage

Ashwini F. Kokate, MTech, Integrated Power System, Department of Electrical,Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur, India
Prof. Pratik Ghutke, Professor, Department of Electrical,Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur, India

Abstract:--

This paper demonstrates the functionality of strength electronics based totally electricity control systems (EMS). The ems consist of a battery and a digitally controlled unmarried-section voltage source inverter (VSI), that is managed by a cutting-edge source or voltage supply relying at the circumstance of the ac grid and the person's preference. Ems guarantees that important loads will paintings while the ac grid fails; in this case the VSI is controlled by means of the voltage source. It additionally accomplishes most electricity manipulate by presenting battery electricity at nearby masses, which can be powered by means of ac grids when the ones masses are huge. Peak shaving saves electricity. The control structure and logic embedded in the EMS are discussed in detail. EMS ensures that critical loads are initiated when the AC grid fails; In this case, VSI is controlled as a source of electrical energy. It achieves high power control by providing battery power to the local electrical load when the load is large when running through the AC grid. Energy saving costs are estimated with high savings.

Keywords:

Energy Management System, Voltage source inverter, Current source, voltage source, AC grid etc.

Stock Market Prediction using Machine Learning and GUI Development

Arpita Bhargava, Electronics and Communication, Nirma University, Ahmedabad, India
Chinmay Khurana, Electronics and Communication, Nirma University, Ahmedabad, India
Vijay Savani, Electronics and Communication, Nirma University, Ahmedabad, India

Abstract:--

Prediction of the stock market trend is a challenging task as there is lots of uncertainty in the stock market. A lot of methods have already been developed in the past for Stock Market Prediction (SMP). In this paper, a two-stage method to predict stock prices has been implemented. Ten technical parameters have been taken into consideration for predicting the price. The model has also been compared to the one designed using a singlestage approach. The limitation of the single-step approach model has also been discussed. For prediction, ten years of historical data of the yahoo stock has been used. In this paper, the work of SMP is implemented in a python programming language. Python library pandas have been used to store the datasets. For pre-processing purposes, the closing price is considered. For preprocessing sklearn library is utilized. In this paper the implementation of the LSTM and linear regression model to predict stock market prices. Finally, for the GUI development python, HTML, CSS, and JavaScript have been used. Flask web framework has been used to create a web application. Features like the prediction graph, the graph for the historical data, and the choice of the company have been incorporated in the GUI.

Index Terms

Machine learning, stock market, LSTM, linear regression, flask, python.

Multipurpose Human Following Smart Trolley

Darshan R Jadhav, Computer Engineering, NDMVP KBT COE, Nashik, India
Nikhilkumar U Marathe, Electronics and Communication, Nirma University, Ahmedabad, India
Kaustubh N Mahajan, Electronics and Communication, Nirma University, Ahmedabad, India
Aniket N Kamble, Electronics and Communication, Nirma University, Ahmedabad, India

Abstract:--

Paper represents design and implementation of trolley which can be used in different application. The trolley will track a custom made tag with a combination of different colors and will follow the target accordingly. Obstacle avoidance will be done using ultrasonic sensors. Using a camera, the trolley will continuously track the target and compares the image of custom made tag , if matched will move towards the target. A raspberry pi is used to carry out all the process in the trolley.

Index Terms

Human Following Trolley, Multipurpose following trolley, smart trolley, Portable robot

Electric Spring for Smart Grid Stability and Voltage Regulation in Distribution Networks

Deepa G.Singanapure, PG Student:Department of EE engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur
Vaishali Malekar, Assistant Professor, Department of EE engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Abstract:--
The characteristics of distributed photovoltaic system power generation system is intermittent and instability. Under the weak grid conditions, when the active power of the PV system injected into the grid is fluctuant, the voltage of supply feeder will increase or decrease, thus affecting the normal use of sensitive load. The electric spring can transfer the energy injected into the supply feeder to the wide-voltage load, which is in series with the ES, to ensure the voltage stability of the sensitive load in the system. In this paper, a grid-connected photovoltaic simulation model with electric spring is built in Matlab / simulink. The voltage waveforms on the ES and sensitive load is obtained under the condition of changing the active power injected into the supply feeder by the grid-connected photovoltaic system. Thought the analysis of the waveforms, we can find that the Electric spring is a kind of effective method to solve the voltage fluctuation of the supply feeder in the grid

Index Terms
ES,GRID, Power Quality.

Authorization and Authentication of User Using License Checking for Automobile

Dhwani H. Jha, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India
Dharti Dholariya, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India
Chandresh Parekh, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India

Abstract:--

This research is about a system that secures a vehicle from unauthorized access and the system will check the license of the user and use other security measures to authenticate the user. The main concept of the system is that it will only provide full access to the vehicle if the user has a driving license and the user is authenticated. Only the persons who are registered in the system will be allowed to use the vehicle. A guest session is provided for any emergency purposes. So overall, this system will use measures against vehicle thieving, illegal driving, unauthorized access, and use of vehicles and limits access levels according to the user's authorization levels. The license is in the smart key, and it is encrypted by the AES algorithm that is the world's most secured algorithm.

Index Terms

Authentication, Authorization, Security, Safety, Identification, License, Smart key.

Development of Empirical Correlations by Regression Analysis and Curve Fitting method for Uncleaned Sugar Cane Juice with Equispaced Tape Inserts

Dr. Abhijit Arvind Patil, Assistant Professor, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur

Abstract:--

The presented work focuses on the development of empirical correlations to represent the change in Reynolds number and twist ratio on friction factor and also to represent the effects of Reynolds number, Prandtl number and twist ratio on Nusselt number. The proposed experimental investigations carried out are based on the implementation of full length equispaced tape inserts by using uncleaned sugar cane juice as a test fluid. The results are proposed by using food grade Stainless Steel, Copper and Aluminium material twisted tapes with twist ratios 3.01, 5.06, 6.78 and 8.39. Empirical correlations are developed by regression analysis for friction factor and Nusselt number. The curve fitting of friction factor, heat transfer coefficient and Nusselt number are presented. The correlations are developed to understand the trend of the flow. The experimental data is compared with the results obtained by correlations. The average mean error is found for all types of tape materials. The average mean error of friction factor food grade Stainless Steel is found 7.18% with the experimental results. For Copper and Aluminum twisted tape material the average mean error of friction factor is found as 14.99% and 9.71% respectively. The average mean error of Nusselt number is found as 2.47% for food grade Stainless Steel material with the experimental data. The average mean error of Nusselt number for Copper and Aluminum are found as 3.94% and 1.75% respectively.

Index Terms

friction factor, heat transfer coefficient, twist ratio, twisted tape, uncleaned sugar cane juice

Crime prediction, analysis and criminal tracking

Diksha Arora, Department of Electronics and Communication, Galgotias College of Engineering and Technology,Greater Noida, India
Harsh Gupta, Department of Electronics and Communication, Galgotias College of Engineering and Technology,Greater Noida, India
Mohammad Taha Ali, Department of Electronics and Communication, Galgotias College of Engineering and Technology,Greater Noida, India
Dr. Jaspreet Kaur, Department of Electronics and Communication, Galgotias College of Engineering and Technology,Greater Noida, India

Abstract:--

With the advancement in technology and rapid growing crime rates in every part of country, there is a huge need/requirement of an automated system to reduce the crime rate. The proposed model predicts the crime by recognizing the behavioral patterns in real-time environment and gives alert about the time and place to the assigned authorities. Also, it detects the type of crime mainly by detecting the weapon used and detects the face of the criminal by face recognition technique and track him. Models which already exist either lack in above mentioned tasks or in accuracy/efficiency but our model performs the mentioned tasks with a good accuracy score thus avoiding any false positives.

Index Terms

OpenCV, Deep Convolutional Neural Network, Recurrent Neural Network, Long-Short Term Memory, Face Embedding, Cascade Classifier, Darknet, Inception v3, Transfer Learning.

Stress Detection in IT Professionals by Image Processing and Machine Learning Techniques

Dr. Suresh M B, Dept of Information Science & Engg, East West Institute of Technology, Bangalore, India
Amruth Gowda A, Information Science & Engg Dept, East West Institute of Technology, Bangalore, India

Abstract:--

The main motive of our project is to detect stress in the IT professionals using vivid Machine learning and Image processing techniques .Our system is an upgraded version of the old stress detection systems which excluded the live detection and the personal counseling but this system comprises of live detection and periodic analysis of employees and detecting physical as well as mental stress levels in his/her by providing them with proper remedies for managing stress by providing survey form periodically. Our system mainly focuses on managing stress and making the working environment healthy and spontaneous for the employees and to get the best out of them during working hours. We detect an individual emotion in each video frame and the decision on the stress level is made in sequential hours of the video captured. We employ a technique that allows us to train a model and analyze differences in predicting the features.

Index Terms
Stress, Facial expression, Framework, Deep learning

Comparison of minimum and maximum values of water levels above mean sea level in three different phases of underground tunnel construction

Lilly R, Assistant Professor, Naval Architecture and Offshore Engineering, Academy of Maritime Education and Training (AMET), Chennai, India
Ravikumar G, Professor, Centre for water Resources, Anna University, Chennai
Prabhakaran.S, Professor ,Mechanical Engineering, Academy of Maritime Education and Training (AMET), Chennai, India.

Abstract:--

In this paper we have made an attempt to compare the minimum and maximum values of water level in the three phases of underground tunnel construction. The construction underground metro rail corridor was taken as study area. The water level data was collected and observed for different time periods. The water level data which was collected and observed were divided into three phases of construction. The datas of post monsoon and pre monsoon water levels from 2009-2011 are considered as before construction. The datas from 2012-2015 are considered as during the construction and the datas of post monsoon and pre monsoon levels from 2016-2017 are taken after the construction. In this the datas from 2009-2015 are collected for the wells around the underground corridors from water resources centres as secondary datas. But the data from 2016-2017 are collected from the primary wells which are located around the underground corridors. The minimum and maximum values of post monsoon and pre monsoon water levels in the three phases of construction are compared to find the impact of the tunnel construction.

Index Terms

Water Level, Underground corridor, Tunnel, pre monsoon, post monsoon

Efficient Multi linear Key P airing C ryptosystem for Reliable Cloud based Service P rovisioning

Dr.Sabout Nagaraju, Department of Electronics and Communication, Galgotias College of Engineering and Technology,Greater Noida, India
C.Swetha Priya, S-201, Shri Annai Apartment, 12th Cross, Bharathi Nagar, Lawspet, Pondicherry -605008, India

Abstract:--

Cloud computing has gained rapid growth in the development of different fields of science and engineering. However, due to the distributed nature of cloud computing, session key generation and establishment is the pressing issue. Session key management plays the utmost important role in the secure exchange of sensitive login credentials and transaction information. Moreover, conventional session key management mechanisms are inadequate and cannot be directly adopted in cloud-based environments. Hence, session key management is very much solely needed solution for reliable cloud-based service provisioning. In mutual authentication, bi-linear key pairing cryptosystem plays a critical role to generate and establish a session key. The existing mutual authentication schemes fail to support true mutual authentication in cloud-based environments as they are vulnerable to secret key leakage, perfect forward secrecy, and untraceability. To mitigate the effect of these attacks, this research develops an efficient multi-linear key pairing cryptosystem. In this cryptosystem, challenge-response messages are used for generating and establishing a one-time shared session key. Furthermore, the performance analysis of the proposed cryptosystem depicts a significant reduction of computation cost, authentication accuracy rates, and resistance to the aforementioned attacks.

Index Terms

Bi-linear, multi-linear, cryptosystem, mutual authentication, cloud computing..

An insight into the technologies required for building an AI based Help Desk

Prachee Adoni, Computer Department , MKSSS's Cummins College of Engineering for Women , Pune, India
Aishwarya Tonpe, Computer Department , MKSSS's Cummins College of Engineering for Women , Pune, India
Esha Chiplunkar, Computer Department , MKSSS's Cummins College of Engineering for Women , Pune, India
Sumedha Joshirao, Computer Department , MKSSS's Cummins College of Engineering for Women , Pune, India
Varsha Pimprale, Computer Department , MKSSS's Cummins College of Engineering for Women , Pune, India

Abstract:--

A help desk is a platform to build a huge customer base as well as maintain the good will of the company in the customer's minds. It helps the company to identify the various issues with their solutions, the customer feedback, along with the problems arising while the IT vendors are trying to develop solutions.The help desk receives a number of queries from the clients as well as IT vendors each day, and hence it becomes very difficult for the people responsible for handling the help desk to manage and process all the requests received. Hence, we have created a solution which automates this process and ensures the processing of all the requests with minimum wastage of time. Our solution consists of an Artificial Intelligence (AI) based chatbot, which would be hosted on the company's website and an email automation system. The chatbot would ensure that all the primary customer queries like the information of basic product information would be handled at the website level, thus reducing the load of emails received to the company. The email automation system would ensure that all the incoming emails would be answered in a timely manner and without human intervention. Also, we are providing a User Interface (UI) where all the email logs would be visible to the concerned authorities and thus they can have a full control over the functioning of the system Thus, our solution aims at reducing human costs incurring to the company and targeting maximum customer satisfaction using applications of Artificial Intelligence, Natural Language Understanding (NLU), Natural Language Processing (NLP), Optical Character Recognition (OCR) etc.

Index Terms

AI, help desk, chatbot, email, Python, OCR, database

Design and performance analysis of Free Space Optical Communication System (FSO) for Pondicherry weather condition

Ankur Yadav, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi
Gaurav, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi
Gautam Kumar, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi
Dr Gurjit Kaur, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi

Abstract:--

Free Space Optical Communication (FSO) System is basically an optical communication technique, which basically utilizes the light waves for transmitting signals via wirelessly in Free Space Network. The main reason behind this popularity is its high speed and wireless network. But this FSO system highly depends on weather conditions. There is a huge difficulty to set up an FSO system when there is a huge rainfall. In this research paper we have designed and analyzed the performance of FSO system by taking the weather conditions of Pondicherry. The performance of this FSO system is analyzed in terms of attenuation due to rain and also calculated the transmission distance where signal can be transmitted safely.

Index Terms

Free space optical communication system, Pondicherry weather conditions, Rainfall rate, Attenuation

Design and performance analysis of Free Space Optical Communication System (FSO) for Pondicherry weather condition

Ankur Yadav, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi
Gaurav, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi, India
Gautam Kumar, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi
Dr Gurjit Kaur, Department of Electronics and Communication Engineering, Delhi Technological University, Delhi

Abstract:--

Free Space Optical Communication (FSO) System is basically an optical communication technique, which basically utilizes the light waves for transmitting signals via wirelessly in Free Space Network. The main reason behind this popularity is its high speed and wireless network. But this FSO system highly depends on weather conditions. There is a huge difficulty to set up an FSO system when there is a huge rainfall. In this research paper we have designed and analyzed the performance of FSO system by taking the weather conditions of Pondicherry. The performance of this FSO system is analyzed in terms of attenuation due to rain and also calculated the transmission distance where signal can be transmitted safely.

Index Terms

Free space optical communication system, Pondicherry weather conditions, Rainfall rate, Attenuation

Separately Excited DC motor speed control by Neural Network controller

H Sumukh, Department of Electrical and Electronics Engineering, KLE Technological University, Hubballi,India
Shilpa Kamath, Department of Electrical and Electronics Engineering, KLE Technological University, Hubballi,India
A B Raju, Department of Electrical and Electronics Engineering, KLE Technological University, Hubballi,India

Abstract:--

In the traction industry, a Separately excited Direct Current Motor (SEDCM) is known for its high performance. As a result, it becomes essential to efficiently regulate the motor's speed. Traditional controllers, such as the proportionalintegration controller, achieve good results in terms of reducing steady-state error, but they take a long time and have a high computational cost. This paper provides an overview of a highefficiency DC motor speed control system based on an Artificial Neural Network (ANN). ANNs can be learned to represent nonlinear relationships that traditional methods, such as the proportional-integral (PI) controller, could not. A backpropagation algorithm-based learning technique is used to create a neural network controller. The nonlinear dynamics of the motor are apprehended by the neural network and its output is evaluated on MATLAB Simulink software. The simulation results show that the proposed neural network controller is successful in producing substantial improvements in control efficiency and advantages in the control system of a DC motor with ANNs as compared to a traditional controller without ANNs.

A Comparison of Movie Recommendation Systems based on Random Forest, SVM and KNN

Harinarayanan K, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India
Krishna S, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India

Abstract:--

Ever wonder how Netflix or other online streaming applications decides what movies to recommend for the users. It is recommending movies to the user based on the rating, interest etc. Not all the people like all movies. According to human psychology, the viewpoint of how a person likes to watch a movie depends on his/her mindset. This varies from person to person. The ideology of one person's viewpoint is totally different from the other person. A recommendation system makes this task easier. Users can utilize the recommendation system for selecting appropriate movies according to their kind. Therefore, we implemented arecommendation system using random forest algorithm. We used the movielens dataset for training and evaluating the performance. The primary objective of this paper is to show a comparison between random forest, KNN and SVM.

Index Terms

movie,recommendation system,person

Three-Phase Fault Analysis on Transmition Line in Matlab Simulink

Harshal Vilas Patil, Department of Electrical Engineering, Tulsiramji Gaikwal patil collage of engineering & technology, Nagpur
Prof. Pratik Ghutke, Department of Electrical Engineering, Tulsiramji Gaikwal patil collage of engineering & technology, Nagpur

Abstract:--

Now-a-days the demand of electricity or power areincreases day by day this results to transmits more power byIncreasing the transmission line capacity from one place to theother place. But during the transmission some faults areoccurred in the system, such as L-L fault (line to line), 1L-Gfault (single line to ground) and 2L-G fault (double line toground). These faults affect the power system equipmentswhich are connected to it. The main aim of this paper is tostudy or analysis of faults and also identifies the effect of thefault in transmission line along with bus system which isconnected to transmission line. Mainly the major faults in longtransmission lines is (L-G) single line to ground fault which areharmful to the electrical equipment. A proposed model intransmission line is simulated in MATLAB software to analysisand identified the faults. Fault block was taken from the sim-power system block library. The whole modeling andsimulation of different operating and different conditions offault on transmission line, their faults are L-G fault, 2L-Gfault, 3L-G fault and three line short circuit of the proposedwork is presented in this paper.

Keywords-

L-L– Line to Line fault, 1L-G – Single Line toGround fault, 2L-G Double Line to Ground fault

A Review on Intrusion Detection System

Isha, Research Scholar, Guru Nanak Dev Engineering College, Ludhiana, Punjab, India
Prof. Jasbir Singh Saini, Assistant Professor, Guru Nanak Dev Engineering College, Ludhiana, Punjab, India
Prof. Kamaldeep Kaur, Assistant Professor, Guru Nanak Dev Engineering College, Ludhiana, Punjab, India

Abstract:--

The crucial purpose of the intrusion detection system is to inspect a system or its activities, meanwhile search for any transpired malevolent operations. Overwhelming development and utility of the internet elevated concerns regarding how to guard and communicate the digital data in a secure way. In contemporary epoch the evildoers use distinct categories of attacks for abducting the sensitive and worthwhile data. Myriad algorithms, techniques and methods have been developed for assistance and to find these attacks. The prime aspiration of the review is intends to cater an information regarding the overview, architecture, lifecycle, types of an detection system along with attacks, methodology, components, working, datasets and challenges.

Keywords –

Cyber Security, IDS attacks, Intrusion Detection System, Malware Detection.

Women Security Using Wrist Band

Jondhale Pradipti K, Computer Engineering , MVP's KBT College of Engineering , Nashik, Maharshtra
Sali Puja P, Computer Engineering , MVP's KBT College of Engineering , Nashik, Maharshtra
Mahajan Samruddhi Y, Computer Engineering , MVP's KBT College of Engineering , Nashik, Maharshtra
Karde Vaishnavi G., Computer Engineering, MVP's KBT College of Engineering Nashik, Maharshtra

Abstract:--

Personal safety has become a critical problem for everyone, but especially for women. A recent survey made by WHO indicates 35 percent of women, globally, facing some form of misbehavior and physical assault. The count of victim is gradually increasing. Here we are going to introduce a system which makes sure the women protection. The device will be easily carried and could be taken whenever need help. The goal of the system is to provide a fast responding and reporting safety device for women. The application will help women to overcome with fear and can call to her guardian that she can take the help. It will report a situation just by pressing button on the smart band. This project resembles a smart band and app; It have the capability to protect the women, with the various sensors integrated within the band. When she will be wearing the band or a watch, if she face any Kind of harassment or if she feel something happened to be endanger she can press the button located on the watch, when she fall in down, the various information such as location, Images and SMS alert will sent to the predefined number by using the GSM. Provided contacts will get the exact location of the victim by using the GPS. It will send the longitude and latitude of the victim so that, police can easily find the victim and the incident can be easily avoided and can save the women, punish the culprit. Using the IoT platform one can track the information of the women remotely. This will help to decrease the crime rate against the women.

Index Terms

GPS, GSM, IOT, Raspberry Pi, Android, Pi Camera.

Approaches to deal with bigger signatures for Post-quantum Transition

Kunal Meher, Research Scholar at Lincoln University College, Malaysia and Assistant Professor at Xavier Institute of Engineering, Mumbai
Divya Midhunchakkaravarthy, Associate Professor in Lincoln College University, Malaysia

Abstract:--

Powerful quantum computer will be reality in coming 10 years. With existence of quantum computer, cryptographic algorithms used today will be vulnerable – particularly public key encryption algorithms and digital signature algorithms. To deal with the problem, the researchers all over the world are doing research in quantum cryptography and post quantum cryptography (PQC). The challenge here is to integrate these PQC algorithms in existing protocols. So, the researchers are exploring different ways of deployment for smooth Post-Quantum (PQ) migration. The main drawback of post-quantum signature primitives is larger key size and larger signature size than traditional digital signature primitives used today. In this paper, different approaches to deal with bigger signature are discussed for smooth PQ transition.

Index Terms

Digital Signature, Post Quantum Cryptography, Combined Signature, KEM

A Comprehensive Study of Fake News Detection Using Machine Learning Techniques

Lalit Sonkeshariya, department of computer science and engineering, Maulana Azad National Institute of Technology, Bhopal, India
Lokesh Yadav, department of computer science and engineering, Maulana Azad National Institute of Technology, Bhopal, India
Deepak Singh Tomar, department of computer science and engineering, Maulana Azad National Institute of Technology, Bhopal, India

Abstract:--

Fake news has now developed into a major issue for social orders and a significant test for individuals battling disinformation. This situation afflicts vote-based decisions, the notoriety of individual people or associations, and has contrarily affected residents, (e.g., COVID-19 outbreak in India). Henceforth, creating compelling devices to battle this marvel by utilizing progressed Machine Learning (ML) techniques represents a huge test. The accompanying paper shows the current assemblage of information on the use of such canny methods in the battle against deception. It begins by describing the authentic viewpoint and the present job of hoax in current data wars. Estimated arrangements dependent on crafted by specialists are broke down and the main headings of the use of canny frameworks in the identification of falsehood sources are brought up. Furthermore, the paper presents some helpful assets (principally data sets trained and tested on Machine learning model) and gives a brief outline of the main Researched Classifiers.

Keywords
Machine Learning, Deep Learning, Fake News, Natural Language Processing, Pre training, Fine tuning

High Voltage Gain with Neural Network Based Electric Vehicle Application

Manish N. Bawangade, Master of Technology, Integrated Power System, Department of Electrical Engineering, Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur, India.
Vaishali Malekar, Professor, Integrated Power System, Department of Electrical Engineering, Tulsiramji Gaikwad Patil College of Engineering and Technology, Nagpur, India.

Abstract:--

Because of the strict regulations of coal and gas emissions, the financial system, electric motors, fuel elements (FCEV), is becoming more popular inside the car enterprise. In this case, the neural network represents the majority of electrical place-checking controller (MPPT) power of 1.26 kW, which modifies the surface membranes of a gas-powered vehicle (PEMFC), which provide the power plant of an electric vehicle, using a DC-to-DC power conversion device. Proposal MPPT radial Basis Community Management neural network (RBFN), use of PEMFC, maximum powerpoint tracking algorithm (MPP). High switching frequency and high level of DC converted energy, this is important for the continuity of business FCEV. Maximum energy benefits of 3-phase Alternating Current Supply Converter (IBC) are designed for FCEV system. Alternating voltage technique is used for input voltage and electrical voltage in a semiconductor, electrical networks. End-to-end RBFN performance analysis is an FCEV gadget that MPPT-deals with the comparison of fuzzy Logic controllers (FLCs) of the MATLAB / Simulink platform

Keywords

Fuel cell electric vehicle, high voltage gain IBC, PEMFC, MPPT, RBFN etc

Analysis of Land Use and Land Cover Change in Okhla Bird Sanctuary

Ajaydeep Singh Rajput, Dept. of Electronics & Communication Engineering Galgotias College of Engineering and Technology Greater Noida, 201310, India.
Dr. Jaspreet Kour, Dept. of Electronics & Communication Engineering Galgotias College of Engineering and Technology Greater Noida, 201310, India.
Kavya Agarwal, Dept. of Electronics & Communication Engineering Galgotias College of Engineering and Technology Greater Noida, 201310, India.
Divyanshi Dwivedi, Dept. of Electronics & Communication Engineering Galgotias College of Engineering and Technology Greater Noida, 201310, India.
Manu Shukla, Dept. of Electronics & Communication Engineering Galgotias College of Engineering and Technology Greater Noida, 201310, India.

Abstract:--

Okhla Bird Sanctuary in Delhi is a stronghold for biodiversity harboring a variety of birds and plant species of economic, ecological and socio-cultural importance. The sanctuary has been targeted for the expansion, due to the continued increase in demand for open area in the locality of the industrial and financially influential zone. As an outcome of this, there have been drastic changes within the areas of OBS. Remote sensing and ecology have great potential to produce highly effective data for biological conservation. The analysis of the land use and land cover of the area is very crucial in the analysis of the concerns regarding ecology. Land cover change assessment relies heavily on satellite data and geographic information systems (GIS). To measure the LULC changes in the area, Landsat satellite images of the year 2013 and 2020, were used. Buildings, river, sand or no vegetation, and trees were classified using supervised classification using the Maximum Likelihood technique and the minimum distance technique. A post-classification method is used for change detection, and a LULC change matrix is procured. Results reveal that, maximum likelihood classification technique performed the best and achieved an overall accuracy of 86.7003% for 2013 with the kappa hat classification coefficient as 0.7264, and for 2020 it attained an accuracy of 92.390% with the kappa hat classification coefficient as 0.8465. While the minimum distance classification technique closely followed and gave an accuracy of 81.4594% for 2013 with the kappa hat classification coefficient as 0.5483 and for 2020 it attained an accuracy of 91.6380% with the kappa hat classification coefficient as 0.8150. Change detection shows a massive decrease of 2550.69 ha (46.63%) in the vegetation area due to human activities and other factors. However, we recommend further exploration of landcover change with ground truth data to get better and more accurate results.

Keywords

Change Detection, Geographic Information System (GIS), Land Use and Land Cover, Remote sensing, Supervised Classification, Vegetation.

Transport Management System

Mohith G C, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida
Narasimha M N, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida
Naveen Basavaraj Tavaragondi, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida
Naveen Kumar Reddy G, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida
Mohammed Usama Sukri, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida
GaliveetiPoornima, Prof, Department of computer science and engineering(CSE) Presidency University Bangalore, Inida

Abstract:--

Most educational institutions' administrators are concerned about student safety inside institutional bus, irregular attendance and also documentations of student transportation records. The conventional method of taking attendance by calling names or signing on paper is very time consuming and insecure, hence inefficient. Radio Frequency Identification (RFID) based attendance system is one of the solutions to address this problem. This system can be used to take attendance and maintain record of student in school, college, and university buses. Its ability to uniquely identify each person based on their RFID tag type of ID card make the process of taking the attendance easier, faster and secure as compared to conventional method. Students or faculty only need to place their ID card on the reader and their attendance and other details will be taken immediately.

Keywords

IOT, Arduino, RFID, Transport Management

Performance optimization of battery Management system for hybrid electricVehicles (EV's)

Akash Burbure, PG Student, Department of EE engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur, India
Pratik Ghutke, Assistant Professor, Department of EE engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur, India.

Abstract:--

The battery management system (BMS) is used to monitor and control the charging and discharging of rechargeable batteries in an electric vehicle, which makes operation more economical. The battery management system keeps the battery safe, reliable and increases aging without getting into a harmful situation. Various monitoring methods are used to maintain battery, voltage, current and ambient temperature conditions. Various analog / digital sensors with microcontrollers are used for monitoring purposes. This paper also addresses charge status, health status and life status and maximum capacity of the battery. By reviewing all of these methods, future challenges and possible solutions can be achieved. This project addresses concerns for the current BMS. Assessing the state of the battery, including charge status, health status and life status, is an important task for BMS. Through a review of the latest methodology for the state evaluation of batteries, future challenges for BMS are presented and possible solutions are also proposed..

Index Terms

Battery management system, state of charge, state of health, state of life.

Experimental Investigation on Heat Transfer Enhancement of Nano Fluids in Vapor Compression Refrigeration

Hemant T. Shinde, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur
Nilesh S. Desai, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur
Nilesh V. Sabnis, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur
Pankaj B. Gavali, Department of Mechanical Engineering, Sanjay Ghodawat University, Kolhapur

Abstract:--

Any refrigeration and air conditioning system produces heat as an inevitable byproduct. The rate of temperature rise in a vapour compression refrigeration device is proportional to the difference between the rate of heat generation and loss. The same rules apply to heat transfer within the compressor, condenser, and evaporator. The method for preparing nanofluids and suspending nanophase powders in the base fluid will be explored in-depth in this investigation. The stability and symmetry of suspension were demonstrated using transmission electronic microscopic images. The experiment was carried out on a test rig with different percentages of nanoparticles in the base fluid.

Silicon dioxide (SiO2) and graphene oxide nanoparticles are utilised as prospective additions in the refrigerant 1,1,1,2-tetrafluoroethane (R-134a) and the lubricant Polyol-ester (POE) oil to improve the efficiency of the test rig. Experimentally, the stability of SiO_2 and Graphene oxide nanoparticles in oil is examined. Nanoparticles were found to be more consistently suspended in mineral oil than in refrigerant in stationary conditions for long periods. In the R-134a refrigerant and compressor oil, SiO_2 and Graphene oxide with specific concentrations of 0.25 %, 0.5 %, 0.75 %, 1 %, 1.25 %, and 1.5 % (by mass fraction) were added. The performance with nanoparticles was then investigated using energy consumption and C.O.P tests. The C.O.P of the device was increased by 16.31% when nanorefrigerant was used instead of traditional refrigerant and by 19.38% when nano-oil was used instead of pure oil, according to the results. Additionally, the use of nanoparticles reduces compressor work and saves the most energy by using nano-oil and nano-refrigerant.

Keywords:

Nanomaterial, nanofluids, nano-oil, nanorefrigerant, C.O.P, POE oil.

The Impact of Innovative Methods Based on Students' Learning Styles on Effective Learning

Sanjaykumar Ingale, Associate Professor, Sanjay Ghodawat University, Kolhapur, Maharashtra, India
Pankaj B. Gavali, Assistant Professor, Sanjay Ghodawat University, Kolhapur, Maharashtra, India

Abstract:--

In outcome-based education environment the focus has been shifted from teaching to learning. There is a demand by the stakeholders for quality education. In assessment and accreditation process more weightage is also given to teaching learning process. The knowledge and skill set acquired by the students is becoming more important. Therefore, it becomes essential for a teacher to adopt an innovative strategy while delivering the course. In order to build these strategies, there is a need to classify the learners. This paper focuses on classification of learners of SY B Tech at the beginning of the course on manufacturing processes. Strategies need to be adopted to suit these different types of learners are also discussed. Think-pair-share, flipped classroom, blended learning strategies were used apart from the traditional teaching methodology. The evaluation criterion for these strategies is designed. It is suggested that these strategies may be applied to different courses for different programs to validate the results or the deviations if any before implementing across the institutions/university.

Index Terms-

evaluation; innovative strategies; learners; Outcome based education; teaching;

Voltage regulation using DSTATCOM in distribution grid for enhancement of power quality (review)

Ashish Vallabhakar, PG Student, Department of electrical engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur
Prof. Radharaman Shaha, HOD, Department of electrical engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur

Abstract:--

In modern areas increasing the use of nonlinear load or power electronics load to glad the necessity of todays business like adjustable speed drives, office accessories, electric motor drive, Variable Frequency drive Energy economical lighting etc. However such forms of load are produce harmonics within the system that ensues load to supply and it'll harmful to equipment connected to the system thus there got to compensate such kind of issues. Already there are numerous devices accessible to resolve and eliminate such kind of drawback however each devices having some benefits and drawback. In planned system use shunt connected primarily based DSTATCOM.

In this project, a three section three wire Distribution Static Compensator (DSTATCOM) is projected for power quality improvement. There are traditional ways available to manage DSTATCOM like Single pulse width Modulation, SPWM, SVPWM. In planned project result analyses by victimization SRF and IRP controller the result determined in MATLAB Simulink.

Keywords:

DSTATCOM, Nonlinear load, Harmonics, Power quality.

Fault Detection and Protection of Induction Motor Using (PLC) Programmable Logic Controller

Payal S. Shende, Mtech, Department of Electrical Engineering, Tulsiramji Gaikwad-Patil College of Engineering, Technology, Nagpur, India
Pratik Ghutke, Assistant Professor, Department of Electrical Engineering, Tulsiramji Gaikwad-Patil College of Engineering, Technology, Nagpur, India

Abstract:--
Induction motors are widely used in many operating areas and industrial applications as they are simple, robust, reliable and have low production costs. The use of Induction motors have increased nowadays due to their versatility, good self-starting capability and these motors also offer simple, rugged construction, low cost, reliability and easy maintenance. The reliability of aninduction motor is of great Importance in applications such as commercial, aerospace and military and many industrial applications. In this paper different problems of IM are dealt with as over current, overvoltage, over temperature, over speed, inrush current, vibration monitoring during it's time of operation. There are various proposed methods for fault diagnosis and protection of IM. In this proposed method for IMs, a new protection method based on a programmable logic controller (PLC) has been introduced. In this study, the method which is applied is PLC based protection system of an IM

Key words:
Induction Motor, Protection, PLC.

A Time-Scaling of Air Quality indices using Machine Learning Approach: A Case Study of Bihar

Naushad Ahmad, Department of Computer Science and Information Technology, Mahatma Gandhi Central University, Motihari, Bihar
Sandeep Kumar, Department of Computer Science and Information Technology, Mahatma Gandhi Central University, Motihari, Bihar
Pawan Kumar Chaurasia, Department of Computer Science and Information Technology, Mahatma Gandhi Central University, Motihari, Bihar

Abstract:--

After first wave of covid-19 pandemics, India is going to scariest and create panic situations everywhere amidst pandemics. We can't have only a single problem like corona virus, behind the spreading of the virus, we have environmental, economic, and illiteracy issues. In these pandemics, environmental issues like air pollution are one of the main causes. We are predicting air quality using two machine learning algorithms. Both models' linear regression and random forest are supervised learning algorithms. Data on pollutants containing PM2.5, NO2, SO2, and CO are collected from a single point in Bihar. The process of developing the model begins by break down the data sets into two sets of training and testing at a random ratio of 80% and 20%. To the prediction of PM2.5, NO2, SO2 and CO, the correlation coefficient is calculated as 0.1417, 0.1263, 0.0808 and 0.2912 for Linear Regression and 0.7722, 0.7867, 0.255 and 0.7681 for Random Forest. Each parameter has in Micrograms per Cubic Meter of Air. Random Forest is more accurate in predicting air pollution than the Linear Regression model.

A Survey on Educational Data Mining Techniques to Predict Academic Performance

Nilesh V. Ingale, Research Scholar, Department of Computer Science and Engineering at SRK University, Bhopal, India
Dr. M. Sivakkumar, Scientist, Venkatashawara research Thanjuvur, India
Dr. Varsha Namdeo, Professor in the Department of Computer Science and Engineering at SRK University, Bhopal, Indi

Abstract:--

Grading students' academic performance is a more difficult and challenging work which will help educators to keep track of progress of performance of students. For this the Educational Data mining (EDM) is a most active and demanding research field. It target is to finding of useful information from the educational dataset by using data mining techniques. Most important tasks of EDM are the prediction of the students' performance. Various researchers all around the globe have published research work on prediction of students' performance . EDM plays an important role in the world of business to help the educational institution for the prediction as well as for make necessary decisions depends on the students' academic performance. Now a day's enhancement of students' performance will affects the students' career and also the reputation of the institute . The main aim of this review paper is to explore the methodology developed and used by these researchers and the findings of their research work in uncomplicated and simplest manner. We presented a comparative study on the effectiveness from prediction of student's performance by applying the EDM techniques. The study results make one important conclusion, which showing that the EDM methods are adequately effective for prediction of students' academic performance, and these predictions are useful to make the necessary decisions and actions by management and teachers.

Index Terms

E-Learning, Academic performance, Data mining

Suraksha Kavach: An Android App to combat a pandemic

Nishant Boro, Department of Information Science, Dayananda Sagar College of Engineering Bangalore, India
Pavan P Jannu, Department of Information Science, Dayananda Sagar College of Engineering Bangalore, India
Ronak Dhoot, Department of Information Science, Dayananda Sagar College of Engineering Bangalore, India
Dr. Rashmi S, Department of Information Science, Dayananda Sagar College of Engineering Bangalore, India

Abstract:--

A pandemic is an epidemic of an infectious disease that has spread across a large region, for instance multiple continents or worldwide, affecting a substantial number of people. Various pandemics in the past were responsible for the death of millions of people on earth. The coronavirus COVID-19 pandemic is the defining global health crisis of our time. It has affected thousands of peoples, who are either sick or are being killed due to the spread of this disease. Pandemics are unpredictable and there's always a chance of another pandemic hitting us in the near future. But it is very well known that the spread of any infectious disease can be prevented by taking certain measures.

Many countries around the world are discussing ways to lead new ways of life. A very common method for controlling the spread of a disease and preventing secondary infections is the use of Contact Tracing. It is the process of identifying people who may have come in contact with an infected person and subsequent collection of further information about these contacts. Despite of all the existing advantages, contact tracing still faces issues related to maintaining user privacy and security, making it a less preferred method. Hence, in order to solve this problem, we make use of Blockchain technology with Contract Tracing to ensure the confidentiality of our users while providing complete public opinion to individuals and government agencies for all verified facts.

Therefore, this work mainly focuses on developing an android application to prevent the spread of a virus during a pandemic by effective contact tracing.

Index Terms

Contact tracing · Pandemic · Android app · Blockchain · COVID-19

Edura Hub: A cloud based electronic learning app

Nitesh Singh, SCSE, GALGOTIAS UNIVERSITY GREATER NOIDA,UP
Jigyanshu Kumar, SCSE, GALGOTIAS UNIVERSITY GREATER NOIDA,UP
Rohan Kumar, SCSE, GALGOTIAS UNIVERSITY GREATER NOIDA,UP
Dr. Saurabh Kumar Srivastava, SCSE, GALGOTIAS UNIVERSITY GREATER NOIDA,UP

Abstract:--

As we are moving toward the vast development of different forms of technologies, now-a-days learning is no longer circumscribe to the classrooms with the delivery of lectures which is the form of providing knowledge, as compared to , an electronic means of learning has continued to evolve. Electronic learning (e-Learning) is increasing day by day providing resources such as education through communication networks, making learning possible from anywhere from any part of the world at any time using the Internet, local or regional local networks. E-Learning applications have became the cornerstone of a learning processes that was develop using process-based planning tools and the process of finding and using all of these tools to create a great application that is not only binding but requires a lot of money. One way is to manage an free platform that gives all software and institutional engineers the right to study, reuse, customize and distribute their content needs based on user basic needs.

These types of paper give us an overview of an e-Learning and different types of open source domain and tell us how a free source can be used to quickly detect the development of e-Learning system on a web site using a standard process.

With the aim of moving from knowing as a developing country to a developed country came the idea of e-learning in India. Certainly a promising change with a positive outlook and no restrictions. e-learning means reading supported by electronic media. e-learning is a forms of education that incorporate motivates, communicates, technology and efficiency. It works as it removes distances and subsequent moves. It is the acquisitions of knowledge and different skill through electronic technology such as computers and Internet-base coursewares and local and international network. e-learning means using resources around the world.

Keywords

JavaScript, HTML, CSS, Advancement, Node js , Express js ,EDURA HUB.

Face Recognition Based on Convolutional Neural Network

Deepika.P,Pavithra.M, Student, Department of Computer Science and Engineeing, Sri Ramakrishna Engineering College Coimbatore, India
B.Mathivanan, Associate Professor, Department of Computer Science and Engineeing, Sri Ramakrishna Engineering College Coimbatore, India

Abstract:--

Face recognition is of great importance to real world applications such as video surveillance, human machine interaction and security systems. As compared to traditional machine learning approaches, deep learning based methods have shown better performances in terms of accuracy and speed of processing in image recognition. This paper proposes a modified Convolutional Neural Network (CNN) architecture by adding two normalization operations to two of the layers. The normalization operation which is batch normalization provided accelerating the network. CNN architecture was employed to extract distinctive face features and Softmax classifier was used to classify faces in the fully connected layer of CNN. In the experiment part, Georgia Tech Database showed that the proposed approach has improved the face recognition performance with better recognition results.

Keywords

face recognition; convolutional neural network; softmax classifier; deep learning

Design and Simulation of Solar PV DC Microgrid for Rural Electrification

Prashant Gabhane, PG Student, Department of Electrical Engineering, TGPCET, Nagpur
Prof.Pratik Ghutke, Guide Department of Electrical Engineering, TGPCET, Nagpur

Abstract:--

In this paper We present the analysis and design of the e dc microgrid system for electrification. The microgrid configuration has been driven by field information gathered from India. The important parameter of such system depends on the Microgrid capacity of the transmission network which overflows the value of the voltage and the current from the main grid, which power the cost matrix analysis of the overall system which has to be equal. In this paper, we compute that the excessive cost of power (COE) for the proposed dc microgrid framework will be under minimal charges as put forth by the electrification governing agency according to the per kW-hr. We additionally present test results from a privately introduced dc microgrid model that exhibit the consistent state conduct, the bother reaction, and the general efficiency of the framework. The results show the reasonableness of the introduced dc microgrid design has totally inflicts with the main grid feasibly and found out to be very easy to implement without any extra cost to the system as far as the rising districts and the number of population in such districts are concerns.

Power Quality Improvement of Hybrid Systems Using Active Control Method

Prashant S. Khandekar, Master of Technology in Integrated Power System Abha Gaikwad Patil College of Engineering and Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur , India.
Prof. Sneha Tibude, Master of Technology in Integrated Power System Abha Gaikwad Patil College of Engineering and Technology, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur , India.

Abstract:--

This paper substantiate the conventional energy depleting very fast and the power demand increasing every passing day, it has become absolute necessary to focus on renewable energy. Lots and lots of project are being undertaken which are capable to make use of power from the renewable energy resources like, wind, sun, water etc . The synthesis of these systems (hydro energy, wind energy, solar power etc.) discover different kinds of problems in the grid like system stability problems or power quality issues which needs to be resolved. The most prevailing passive filters were used but at the present time active filters such as Static Synchronous Compensator (STATCOM) and Dynamic Voltage Restorer (DVR) are select for the task. Static synchronous comparator is a device that regulates the voltage level or the reactive power in the system. It is predominantly used to maintain voltage stability, enlargement of critical clearing time. Dynamic Voltage Restorer (DVR) is a voltage restorer that can solve the voltage power quality issues. The purpose of this work to integrate the STATCOM and the DVR for voltage control and harmonics filtering. The simulation will be carried in MATLAB/SIMULINK and results will be presented to validate the claim.

Keywords

STATCOM, DVR (Dynamic Voltage Restorer), WTIG (Wind Turbine Induction Generator)

Implementation and analysis of steady state and Transient stability enhancement of power system by Using pi PID controller in simulation

Pritesh Mhaiskar, PG Student: Department of Electrical engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur.
Pratik Ghutke, 2Assistant Professor Department of Electrical engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur.

Abstract:--

In this work we are implementing a PID controller for stabilization of the electrical system. The property of the system to return to an acceptable working condition after a temporary is called volatility, which is a major problem in the power system. We are considering a single machine infinity bus (SMIB) system with a swing equation model. The control technology is implemented using a linear controller called a PID and the actuator used is a controllable series capacitor (CSC). CSC is designed using an injection model. We are looking for a short circuit error at the very end of the transmission line. The control goal is to run the controller in such a way that the system goes to a constant equilibrium point when an error occurs. We plan to implement the above work on the MATLAB / SIMULINK platform.

Keywords:

PID, PSS, EP, Power Quality.

Design Of Portable Hydraulic Extraction Mechanism

Kunal U. Shinde, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Mayur Girase, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Sanket Pawar, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Vaibhav Panchal, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Vikas Patole, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India

Abstract:--

An office chair, or desk chair, is a type of chair that is designed for use at a desk in an office. It is usually a swivel chair, with a set of wheels for mobility and adjustable height. The gas cylinder used for height adjustment may leak and provide no support. The most feasible option to deal with this issue is to remove the old cylinder and replace it with a new one. For this purpose, you first need to remove the faulty cylinder. This is the toughest part of replacing the cylinder. The lift action allows you to change the height. If a cylinder breaks, then you are stuck with a chair that will not hold the weight of the person sitting in it. We have office chair cylinder replacement mechanism so that you can fix your chair. When you run into a problem with your home office chair, there may be an affordable solution other than replacing the chair.

Index Terms

Office Chair, Hydraulic cylinder, Mechanism, Ergonomics, Aesthetics

Stock market price prediction using Recurrent Neural Network and LSTM

Sahil Sanjay Landge, Mumbai, India

Abstract:--

The stock market or equity market refers to the markets where shares or stocks are traded. The stock market is a volatile market and a great source that can generate wealth. It is very important to predict future trends of stocks to gain profits. Predicting a trend in stock prices requires advanced algorithms of machine learning. The recurrent neural network (RNN) algorithm is one of the most powerful algorithms for sequential data. LSTM is the acronym for long short-term memory. They are the units of the recurrent neural network. The role of LSTM is to remember information for a long duration. We will predict daily stock prices of NASDAQ Stock Exchange listed companies based on Recurrent Neural Network (RNN). In this work, we have trained input historical data of stock market price of various firms like Tesla, Apple and Facebook past ten years. It will show the results of Predicted stock values vs Real ground truth values.

Index Terms—

Stock Prediction, Neural Networks, RNN, LSTM.

Paramedic: Ambulance System for Emergency Services

Deepika S Dominic, Asst.Proffesor, School of Computer science &Engineering Galgotias University Greater Noida, India
Saima Siddiqui, School of Computer science & Engineering Galgotias University Greater Noida India
Hrishikesh Kumar, School of Computer science & Engineering Galgotias University Greater Noida India
Nikhil Kumar, School of Computer science & Engineering Galgotias University Greater Noida India

Abstract:--

The period of Information innovation has become a pivotal piece of our dynamic life for each individual on the planet and use of cell phones is rising dramatically. From the review of 2010, it is expressed that over 20% of patients requiring crisis treatment have passed on because of late appearance of rescue vehicle. In this over 20% passing, significant issue is that we by and large call clinics for emergency vehicle then clinic staffs organize an emergency vehicle for us, which takes around 10-15 min, and consistently for basic patients is truly significant.

In this way, we need to build up an android application, which will save numerous lives. By utilizing this application anybody can book a rescue vehicle inside couple of moments and it can save numerous basic patients. It depends on live area global positioning framework. In which, clients can present an excursion demand that is naturally shipped off a rescue vehicle driver close to you (actually like ola application does), making the driver aware of your area through GPRS. At that point the rescue vehicle driver will come, get you and drive you to your mentioned or close by clinic.

The application will naturally sort out the navigational course for the medical clinic, figures the distance and charge and show it to the client. Clients can download the application by the name Rapid Ambulance in an android or ios cell phone with the presence of a functioning sim card and web office to get OTP for confirmation of portable number.

Keywords:

GPS, EMS, Ambulance Service

Multi-level Clustering Protocol to Reduce Energy Consumption of WSN: A Review

Shalini Sharma, Guru Nanak Dev Engineering College, Ludhiana
Amandeep Kaur Sohal, Guru Nanak Dev Engineering College, Ludhiana

Abstract:--

The Wireless Sensor Networks (WSNs) is the decentralized type of network in which sensor nodes sense information and pass it to the Base Station (BS). Due to the self-configuring nature and far deployment of the sensor nodes energy consumption and security are major issues of WSN. To reduce the energy consumption of the network clustering is popular in WSNs. In the approach of clustering, the whole network will be divided into clusters based on location-based clustering. In each cluster, Cluster Heads (CHs) are selected based on distance and energy. The sensor node which has maximum energy and the least distance to the BS will be selected as CH in the cluster. The sensor nodes within the cluster will aggregate data to the CH which will forward data to the BS. The clustering approach reduces the energy consumption of the network and with time various improvements are proposed. The popular improvements are to increase the level of hierarchy in the network. In this paper, various multi-level hierarchal clustering methods are reviewed.

Index Terms

WSN, Clustering, Cluster head, Multi-level hierarchy

Big Data Analytics and Protection against Sensitive Data Exposure for Web Security

Shivangi Mehta, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India
Dharti Dholariya, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India
Dr. Chandresh Parekh, School of Information Technology, Artificial Intelligence and Cyber Security, Rashtriya Raksha University, Gandhinagar, Gujarat, India

Abstract:--

Every enterprise today is a target for aggressive hackers, which is why data security has become the most needed thing in today's era. Even though the big companies are maintaining the best security practices, the most dangerous attackers target these companies and businesses and get success to hack their systems. With the humongous increase in the quantity of data, the risk of preserving the sensitive information such as Biometrics, Health information, Credentials, Banking information, UPI information also increases. Therefore, the analysis of Big Data becomes an important aspect to collect and analyse the data based on historical cyber-attacks.

Keywords

Big Data, Big Data Analytics, Cyber Security, Cyber Security Analytics, Security Tools, Data Leak Prevention.

Learning Management System

Nidhi Goda, Students, Department of computer Engineering, Savitribai Phule Pune University
Shivani Kagliwal, Students, Department of computer Engineering, Savitribai Phule Pune University
Srushti Wajge, Students, Department of computer Engineering, Savitribai Phule Pune University
Lokesh Bhavsar, Students, Department of computer Engineering, Savitribai Phule Pune University
S. A. Talekar, Assistant Professor, Department of Computer Engineering, Savitribai Phule Pune University

Abstract:--

A Learning Management System's role is determined by the organization's goals, online training policy, and desired outcomes. LMS software is most commonly used to deploy and monitor online training initiatives. Assets are usually submitted to the Learning Management System, making them available to remote learners. In certain cases, the LMS can also provide built-in eLearning authoring tools, allowing you to create online training materials without the need for additional software.Consider a Learning Management System to be a massive database where you can store and monitor data. These online training tools are accessible to anyone with a login and password at any time and from any place. Administrators, instructors, and students all profit from LMS software. Students and teachers have access to and can upload information.Calendars, syllabus, assignments, and grades are examples of course materials. Instructors and administrators may also monitor student progress on an individual and aggregate level using LMS platforms. This program also facilitates remote learning and helps to reduce the use of paper materials.

Keywords-

LMS, KM, PHP, CSS, Structured Query Lan- guage.

Hybrid Solar-Wind Charging Station for Electric Vehicle and Its Simulation

Shubham Ajbale, PG student Department of Electrical Engineering, TGPCET, Nagpur
Pratik Ghutke, Guide, Department of Electrical Engineering, TGPCET, Nagpur

Abstract:--

Electric vehicles play a crucial role in energy saving and emission reduction of harmful greenhouse gases. Electric vehicles dispersion into the vehicles market has not been up to the mark due to less price effective and these vehicles have to be compelled to recharge once in 65 to 70 km drive. The novel hybrid vehicle charging station consist of completely different sources like PV systems, wind systems, the AC supply, batteries are used as a main energy storage system, type DC small grid for good energy delivery. Thus, grid gives sufficient quality of power to three different loads particularly 110-volt AC single-phase output ,100 v DC output. The grid is at 230 V rms with 50 Hz connected isolator in reference to the DC bus. The three-part output of the grid is regenerated to the rippled DC by utilization of DBR (Diode Bridge Rectifier). The regenerated DC voltage is fed to alphabetic character device that could be a DC-DC devices, creating the rippled DC to constant DC with the utilization of a buck electrical device, this paper justifies comparative performance hybrid charging station using buck and zeta converter to stabilize the DC voltage. Proposed system analysis in MATLAB Simulink.

Keywords

Charging station, DC grid, Electric vehicle, MATLAB Simulink

On Feature Ranking for Computer Networks Intrusion Detection

Somya Sharma, Department of Applied Mathematics,Delhi Technological University, Delhi
Yash Sharma, Department of Applied Mathematics,Delhi Technological University, Delhi

Abstract:--

Network-based intrusion detection systems have become an indispensable part of today's security systems because the intrusions pose severe threats to systems as well as to the user community. Keeping their severe threats in mind, in this paper, we aim to study and analyze the network traffic of intrusions and find the network traffic features on which the malicious traffic differs from the normal traffic. To find such distinguishing features, we rank the traffic features based upon statistical techniques of ANOVA and the Chi-Square test. Such ranking of features helps us in identifying the important traffic features that can better distinguish normal and malicious traffic. In the future, top-ranked features can be effectively used to build stronger intrusion detection systems.

Keywords:

Feature Ranking, Intrusion Detection, Network Traffic, Traffic Analysis.

Smart Wristband for COVID Patient Health Monitoring System

Sonali Awate, Cummins College Of Engineering For Womens Pune.
Tanmayee Talekar, Cummins College Of Engineering For Womens Pune.
Raksha Pawar, Cummins College Of Engineering For Womens Pune.
Prof.S.G Dube, Cummins College Of Engineering For Womens Pune.

Abstract:--

It is needless to say that COVID- 19 has changed the world. COVID wave 2 is rapidly spreading across the globe. India's second wave has hit with such a ferocity that hospitals are running out of beds, in this situation IOT based health monitoring system capable of reducing unnecessary burdens on the hospitals.

The main aim of the project is to implement smart wrist band for Covid patient which will monitor health of patient using different sensor such as Temperature, Heart rate and Oxygen level also band monitor basic room parameters, and sends these parameters to the cloud via internet connectivity, where a doctor or patient's relative can access data stored on an IOT platform.

In case of emergency alert message is sent to doctor and relative along with location using GPS module

Our project provides reliable, effective and simple yet important solution for Covid patient who are under home quarantine.

Keywords:

health monitoring, IOT, heart rate, oxygen level, Temperature, Covid health monitoring

Loss analysis and stability consideration for Multiphase Synchronous DC/DC Buck converter

Sujoy Chaudhary, Electrical Engineering, Delhi Technological University, Delhi , India
Prashant, Electrical Engineering, Delhi Technological University, Delhi , India
Praveen Kumar Pal, Electrical Engineering, Delhi Technological University, Delhi , India
Shreyansh Upadhyaya, Electrical Engineering, Delhi Technological University, Delhi , India

Abstract:--
The latest high performance microprocessors require the power supply to provide high current with fast transient response. Multi-phase DC-DC converters fulfill these requirements. In the paper loss analysis of a Multi-phase Buck Converter is carried out using MATLAB . Loss analysis proves its importance and provides the load current transition points for different phase operations. Also, multi-phase openloop synchronous buck converter model has been developed in SIMULINK. The open loop transfer functions have also been developed. The analysis done and the math developed may be used to design a controller for closed-loop operation in future.

A Study of Regularization Techniques in Deep Neural Networks

Sushma Priya Anthadupula, Department of Computer Science Engineering, Maulana Azad National Institute of Technology, Bhopal, India
Dr.Manasi Gyanchandani, Department of Computer Science Engineering, Maulana Azad National Institute of Technology, Bhopal, India

Abstract:--

Deep Neural Networks (DNN) have piqued the attention of researchers due to their ability to efficiently solve a variety of real-world complex problems. To achieve accurate results the training data should be sufficiently large. However, many times we see that the training dataset is not very large. This leads to overfitting and underfitting problems. To address these problems, regularisation of the available data comes to the rescue. Several Regularization techniques have been proposed and have shown significant improvement in the performance of DNN. In our work, we show a comparative analysis of all the regularization techniques in one place. This assists in the exploration of associations and basic parallels between them. All the regularization methods have been discussed in brief in this work.

Keywords

Regularization, Deep Neural Networks, Overfitting, Machine Learning

Assistive Technology for Disabled and Elderly People

Swati Pawar, Assistent Professor, E & Tc Department SITRC, Nashik, Maharashtra
Vivek Ugale, Assistent Professor, E & Tc Department SITRC, Nashik, Maharashtra
Samruddhi Desai, Assistent Professor, E & Tc Department SITRC, Nashik, Maharashtra
Astha Dubey, Assistent Professor, E & Tc Department SITRC, Nashik, Maharashtra
Kaveri Netawate, Assistent Professor, E & Tc Department SITRC, Nashik, Maharashtra

Abstract:--

The Lack of mobility is a huge concern that affects the daily life of not only disable/elderly people but also their families. Therefore, assistive mobility device is developed to give these people an independent living opportunity. There are many devices are developed in past for the same purpose and motivation. But some other additional feature in that old technology will act cheery on the cake. This paper presents the design and development of a smart wheelchair operated by head movement and as well as simple Application(apk) on a mobile phone. The prototype of a wheelchair is made on a simple toy car with three legs. Gesture control, Health monitoring, and obstacle detection are in addition to conventional joystick-controlling interface to enhance the interaction with the user. Furthermore, according to user preference and interaction result has been presented

Index terms

Arduino, Gesture control, Head Movement, Health monitoring, Raspberry pie, Sensors

Efficient Resnet Model for Atmospheric Visibility Classification

Yogananda Atreya, Electronics and Communication Department, MNNIT,Allahabad, India
Asim Mukherjee, Electronics and Communication Department, MNNIT,Allahabad, India

Abstract:--

Atmospheric visibility is an important element of meteorological observation. With existing methods, defining image features that reflect visibility accurately and comprehensively is difficult. This paper proposes a visibility detection method based on a deep learning model termed Resnet that addresses issues caused by a lack of sufficient visibility labelled datasets. The proposed model is used for calculating the visibility of external geo-tagged images directly without relying on weather images or data that require costly sensing or customized capturing. A large collection of internet photographs are used for the current data-driven approach to learning rich scene and visibility variations. Finally, the performance of Resnet is compared over the different variant of Resnet and other deep learning models in terms of diverse performance metrics and shows the ability of proposed Resnet model in atmospheric visibility detection.

Keywords:

Deep Learning, Convolutional Neural Networks, Residual Networks.

Design and Manufacturing of Auto Removable Crop Protection Shed and Its Prototype

L. K. Toke, Associate Professor, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Pratik R. Jadhav, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Yogesh D. Kirtane, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Ajay K. Kulkarni, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Akash D. Dhongade, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra

Abstract:--

These Days innovation has been improved immensely. Despite the fact, there is such a significance for innovation in our standard life there are even individuals whose ways of life is far to this notable term innovation. Along these lines, it is our duty to structure very few dependable systems which can be effectively utilized by farmers. The fundamental motivation behind this paper is to keep the fields safe from the substantial rain and furthermore secure the perimeter with the help of laser security system. The proposed system includes ensuring the fields by the auto roof which covers the entire territory where the crop is spread.

Keywords-

Automation, Crops, DC motors, Laser Protection.

Automatic Sorting System

Prof. Prashant salunke, Department Of Electronics And Telecommunication Engineering, Sandip Foundation's, Sandip Institute of Technology And Research Center, Nashik`
Aman Agrawal, Department Of Electronics And Telecommunication Engineering, Sandip Foundation's, Sandip Institute of Technology And Research Center, Nashik`
Vishesh Geete, Department Of Electronics And Telecommunication Engineering, Sandip Foundation's, Sandip Institute of Technology And Research Center, Nashik`
Rayyan Ansari, Department Of Electronics And Telecommunication Engineering, Sandip Foundation's, Sandip Institute of Technology And Research Center, Nashik`

Abstract:--

As the industries are growing need of Automation is increasing lots of labor is required in industries for sorting purpose. Sorting plays a key role in any industrial automation, particularly in the field of packaging industries. This paper aims at providing significant low-cost automation in industries that calls for sorting and how the implication of pneumatics can yield a desirable solution. The prototype of the automatic sorting machine allows a systematic sorting of the carton boxes corresponding to their colors using a Sorting system, which is achieved by using TCS3200 Color sensor and Pneumatic system. The sorted carton boxes will be distributed According to their colors which will help a lot in industry in minimizing labor and also it is time saving process and will increase productivity.

KidsTrackingSystem usingLoRaWANTechnolog

PiyushS.Dond, Student, Dept.E&T, SIEM
AniketJ.Ingal, Student, Dept.E&T, SIEM
GauriA.Gharat, Student, Dept.E&T, SIEM
Prof.S.J.Pawa, Professor, Dept.E&T, SIEM

Abstract:--

Kidssafetyand tracking are a major concern as the greater number of crimes on children are reported nowadays.Withthismotivation,asmart IoT device for child safety and tracking is developed to help the parents to locate and monitor their children.The system is developed using ESP32 board and interfaced with GPS, LoRamodule and cloud computing.Then ovelty of the work is that the system automatically alerts the parent/caretaker by using mobile application when immediate attention is required for the child during emergency.The parameters such as longitu deandl atitude of the childare Used for parametric analysis and results are plotted forthe same.The above system ensures the safety and tracking of children

Keywords-

loT;ChildrenSafety;GPS;LoraWAN;Sensors;ESP32boar

Optimization of socket in power lift gate assembly

Aniket Jagtap, Dhole Patil college of Engineering, Pune University, Pune
Yogesh Ingulkar, Dhole Patil college of Engineering, Pune University, Pune
Anup Wani, Dhole Patil college of Engineering, Pune University, Pune

Abstract:--

The purpose of this work is to model and simulate the static and dynamic behavior of an electrically powered lift gate, e.g., the lift gate itself and its drive system. The resulting model is going to be used for simulation during development of the lift gate control system software. The simulation model has to be based on physical equations and be adjustable to different lift gate dimensions and different actuators. After adaptation to ambient conditions the model is verified and validated. The model should simulate both static and dynamic behavior of the power lift gate system. Thereby, development of the control unit software can be tested and evaluated without having to apply it on the real system every time or even when no real system is available. The practical advantage with simulation is mainly that tests can be done without endangering the hardware.

The drive system itself is composed of a spindle that is driven by a DC-motor over a gear and a spring. When developing the control system, it is convenient to use a simulation model instead of having to implement it on the system every time. The simulation analytically describes how the system is behaving. Ansys Workbench is used to build the simulation model. Verification is done by comparison between physical test data and simulation results.

Index Terms

Power lift gate system, Ansys Workbench, Static behavior, dynamic behavior, verification, physical test

IoT Based Smart Water Meter

Ankita Iyer, Student
Anjali Singh, Student
Manisha Khaire, Student

Abstract:--

This Paper helps in the water management in the current water supply situation in urban residence as well as commercial establishments. Moreover the excess water is utilized by the consumer, it is considered as additional consumption. So, in this paper we are proposing a method for a proper water management by using smart metering system. Thus the overall objective of this system is to deliver healthy water to the consumer, avoid insufficient quantity, reliability, maximum coverage at affordable cost for consumers as well as it ultimately benefits to the utility. To attain this objective organization has to evolve operating procedures to ensure that the system can be operated efficiently. It is an advanced, profitable, and secured and it can be adopted to the conventional system.

Theft Detection using Vehicle Number Plate Recognition System

Arti Vilas Bhalerao, Maratha Vidya Prasarak Samaj's Karmaveer Baburao Ganpatrao Thakare College of Engineering, Nashik

Abstract:--

Large number of vehicles around us in daily life creates disturbances such as heavy traffic, stealing of vehicles at the places like toll plazas, parking areas, heavy traffic roads. Management of vehicles transportation is tedious and time consuming task if it is completely done manually and which results in huge errors and faults. Therefore it is necessary to develop automatic license plate recognition system to solve the problems discussed above which will automatically recognize number from front side image of vehicle. The detection number plate goes through following steps: finding plate location in image, segmenting and recognizing characters. Number of license plate is displayed on graphical user interface and stored in database with time and date for further use and alarm will ring of stolen vehicle is detected. The system can be used for purpose of security as well as automatic highway speed detection, traffic violation cases, toll plazas, parking areas.

Analysis on Walker

Prof.Ashish.P.Borhade, Assistant Professor, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Ashutosh Kharche,Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Dhiraj.S.Amodkar, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Bhupesh.P.Chaudhari, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Sagar.G.Mahajan, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik

Abstract:--

With increase in age, The elderly population faces problem in knees and legs. The walkers have become a part of life especially in urban cities. The multistorey houses have stairs and walkers should have sufficient strength and mechanism to climb up and climb down. For easy handling the walker should be light enough to be operated by aged persons. The current research investigates the feasibility of walker made from Aluminium Alloy and Carbon Composite Material using techniques of Finite Element Method. The Cad model of walker is developed and FEA Analysis is conducted using Ansys Structural Software. The comparison studies between the two materials is made on the basis of Stress, Deformation and Buckling load. This study is to counsel a replacement auxiliary walker
1) That may be used not only on flat but in real urban environments as well
2) Could be used with none psychological burden once going outside
3) Could be factory-made with low cost to enhance the mobility of the senior citizens and people with disabilities and steer them to a healthy and enjoyable life.

Keywords

Walker, FEA, Stress, Deformation , Buckling load

Visual Object Tracking Based on Normalised Cross Correlation and Least Square Estimation

Ashwani Kumar, department of ECE, Delhi Technological University, New Delhi, INDIA
Prof. Jeebananda Panda, department of ECE, Delhi Technological University, New Delhi, INDIA

Abstract:--

Object tracking is an active research topic in computer vision field for the applications like observational analysis, athletics, machine navigation, driverless vehicle, human-machine interfacing, and medical imaging. For tracking objects of interest particular detectors are used to detect objects and then tracked accordingly. Tracking process is generally completed in first Detecting and then Tracking. Observational analysis of objects in changing environments is need of the hour. Tracked objects can also be classified while being tracked other than tracking only. Object tracking is achieved by observing objects' spatial and temporal changes in a sequence of images and also its location and size in frame. In observational analysis, identification of moving entity of interest in video frames is significant for tracing and analyzing their behavior. Moving entity detection is of prime importance in video frames and background subtraction is a basic method for foreground separation. Various problems are faced in object tracking like illumination variation, object deformation, scale change, occlusion, background clutter, out of view, rotation etc. Although with the advent of deep learning technology and availability of high computational power in general purpose and high end embedded computers with very high graphical processing units, it is becoming feasible and more practical to design application of computer vision requiring object tracking which are faster and free from various problems faced in traditional methods at the cost of high computational requirements in training Deep Learning networks [8] but the scarcity of computational power and faster response time in low end machines has led to research on this topic for an optimized algorithm that satisfies our requirement of faster and sufficient accurate tracker. To achieve the purpose of efficient tracking we have proposed a fusion of normalized cross-correlation with linear regression techniques least square estimation for tracking purpose.

Index Terms

cross correlation, least square estimation, object detection, object tracking

Automatic Traffic Sign Detection and Recognition System

Prof. B. S. Tarle, MVPS's KBT College Of Engineering, Nashik
Sayali Athare, MVPS's KBT College Of Engineering, Nashik
Aishwarya Brahmankar, MVPS's KBT College Of Engineering, Nashik
Prajakta Khaire, MVPS's KBT College Of Engineering, Nashik
Rutuja Mali, MVPS's KBT College Of Engineering, Nashik

Abstract:--

The automatic traffic signs detection and recognition is a critical feature of advanced driver support systems. It can be utilised for driver assistance to reduce collisions, as well as in driverless cars in the future. It's a computer vision based system for detecting and recognising traffic signs in real time, designed specifically for intelligent vehicles. Traffic sign detection and recognition are the two key elements of the methodology. It is made up of algorithms that locate local invariant properties in a candidate sign and match them to features of template images in the data set. The recognition is carried out by locating the template image with the greatest number of matches. The proposed system will use real-time photos to recognize and identify various types of traffic signs. The planned technology will provide drivers with sign information and assist them in adhering to traffic laws. A text to speech module is additionally given; without it, the driver would got to studied the words printed on the classified sign; in any case, with the assistance of a voice module, exhausted drivers, understudy drivers, or drivers driving in new domain will have more consolation. The accuracy is dependent on the training and testing of traffic sign images. The accuracy of system is approximately 77.77% which may vary.

Index Terms

Contour Analysis, Detection and Recognition, Image Processing, KNN, Traffic Sign

Optimization of Car Bumper Beam for Low-speed impact using FEA

Bhushan Shivshankar Dorik, Dhole Patil clg. Of Engineering, Pune
Prof. Anantharama B, Dhole Patil clg. Of Engineering, Pune
Prof. Dattatray Kotkar, Dhole Patil clg. Of Engineering, Pune

Abstract:--

This Project Report represents the Car Bumper Beam and it's optimization. Bumper beam is an important component in the automobile bumper assembly, which is having important role in crash safety as a protection for occupants and a car's frontal compartment by absorbing impact energy. The most primary and critical parameters, including material, thickness, shape and impact condition are studied in this project. Also it defines the design and simulation of a front bumper beam to enhance the low-velocity impact crashworthiness safety. So here we are going to study Bumper Beam in low speed impact only.
Here, Two different materials namely Steel and Low cost Aluminium are studied for 2 different thickness i.e. 2mm and 4mm. It is simulated to determine the Maximum Stress induced, Strain occurred and energy-absorption behavior in Low Speed Impact. So topic includes mainly Preprocessing, Solution and Post processing i.e. three phases of CAE (Computer Aided Engineering). Different plots are plotted and compare for both materials and its thicknesses.

Index Terms

Hypermesh, Ls-Prepost, Ls-Dyna.

GIS Mapping of Cohesion and Friction Angle for Large Scale Landslide Susceptibility Assessment

Cheryl F. Daleon, Central Mindanao University, Maramag, Bukidnon, Philippines

Abstract:--

This study aimed to respond to a country's vision to be disaster-free through open access to reliable and accurate landslide risk information. Moreover, cohesion and friction angle are two of the most crucial input parameters in slope stability analysis for deterministic method. However, determination of its spatial distribution especially for large scale landslide susceptibility assessment is costly and time consuming. Hence, prediction of these parameters through correlations while considering a common geologic class may address the problems of laborious field investigation and expensive laboratory tests. The data are gathered from ten (10) sampling locations of a mountainous study area. The slope map is generated through a processed Digital Elevation Model (DEM) in Geographic Information System (GIS) platform. Slope angles are confirmed in the site while cohesion and friction angle are determined from the direct shear test. The correlations are formulated using the regression analysis. GIS is used to map the spatial distribution of cohesion and friction angle in the area.

Index Terms

Cohesion, correlation, friction angle, slope angle

Mitigation Technique for Sybil Attack in Mobile Ad-hoc networks

Dhanashri Saindane, Dept.of of Mobile Communication and Network Technology, GTU Graduate School of Engineering and Network Technology, Ahmedabad,India
Dr Komal Borisagar, Associate Professor, Gujarat Technological University, Ahmedabad,India

Abstract:--
Mobile Ad hoc networking allows portable devices to establish communication independent of a central infrastructure. However, the fact that there is no central Infrastructure and that the devices can move randomly gives rise to various kind of problems, such as routing and security.In this research, we have created a real network using random mobility scenario and performed an analysis of Topology based Routing protocol and found that AODV protocol has better performance than other routing protocol also implementation of Sybil attack is performed.After implementation of Sybil attack we analyzed that the performance of network gets degrade which is measured by considering parameters throughput,delay,packet delivery ratio, packet dropping ratio.The complete practical analysis of this research work is done using Network Simulator (NS2).

Index Terms
Mobile Ad hoc Networks, AODV ,Routing ,Sybil Attack

Smart Watch for Elderly People Using Microcontroller

Gulam Mustafa Khan, Dept E&TC, SIEM
Harshita L Chandekar, Dept E&TC, SIEM
S. J. Pawar, Dept E&TC, SIEM
Y. R. Risodkar, Dept E&TC, SIEM
M. K. Sangole, Dept E&TC, SIEM

Abstract:--

The design and comprehension of a system similar to a smart watch is described in this paper. This project is designed to measure heart rate, temperature, pulse rate. it also acts as fitness tracker it will count your footsteps, calories, track your sleep. Basically, it will take care your basic routine life which we used to forget in every day's stress. The smart watch has many potential capabilities like message notification, GPS Navigation and calendar synchronization. The smart watch is designed for senior citizen are retired and most of them suffer from major and minor health issue which affects their day-to-day life. Our system serves as a solution this problem, if an older person falls or collapses down it will immediately send a notification, SMS and Location to their respective care taker. It keeps tracking the health status of the person and send the health status to the respective care taker through SMS once in a every minute. It is basically a wearable mini smartphone in the form of wristwatch. And of course, a Bluetooth connection for SMS, notification, call or send and receive messages.

Index Terms

ATmega328 Microcontroller, LCD display, GPS, Temperature Sensor, Fall detection Sensor and Heart Rate Sensor.

Evaluating the prediction model of shear cracking characteristics in RC beams with side face reinforcement

Irish TAMBIS, Civil Engineer/Instructor, Central Mindanao University, Bukidnon
Tamon UEDA, Distinguished Professor, College of Civil and Transportation Engineering, Shenzhen University (Shenzhen, China
Dawei ZHANG, Associate Professor, Institute of Structural Engineering, Zhejiang University (Hangzhou, China)

Abstract:--

Studies of shear cracking has been continually conducted because of the relatively complex manner involved during the formation of cracks, interface shear transfers and variation of stresses in reinforcing bars due to bond. Cracks may expose bars to the external environment, which is the reason for corrosion of inside steel. To avoid this phenomenon and to protect the structural members from deterioration, cracks should be accurately predicted and minimized to the acceptable limit under normal service loads. This paper presents the evaluation results of the proposed prediction model from the outcomes of the experiment. A series of reinforced concrete (RC) beam specimens were prepared taken into account the different variation of parameters including side face reinforcement arrangement, area, and diameter, main longitudinal reinforcement ratio, spacing of shear reinforcement and shear span to effective depth ratio. The experimental work included the investigation examining the effect of these parameters to the diagonal crack spacing and shear crack width of the beam. The crack width was obtained using points arranged in rosette for measurement of the deformation of concrete. Shear crack spacing was proposed and developed based on the harmonized model of the previous studies and the concept of slip theory. The crack width model was then generated from the formulated shear crack spacing and the modified distributed strains within the crack. The results of the experiment through gathering measurement of the concrete strains consolidated as the bases of comparison when using the proposed modified model predicting the shear crack spacing and shear crack width. Finally, the proposed prediction model calculating the crack spacing and crack width verifies the results of the experiment and shows better prediction when compared with existing prediction models.

Index Terms

shear cracking, reinforced concrete beam, side face reinforcement

Structural Analysis of Electric Vehicle Chassis

Ishwar Bansode, ME Design Student DPCOE
Maheshwer C, Assistant professor DPCOE
Hanumanth Narute, Assistant professor DPCOE

Abstract:--

Electric vehicles are becoming increasingly popular because of important advantages they offer Eco friendliness from a systematic standpoint cheaper fuel cost lower maintenance expenses etc. Government of India (GOI) has been supporting electric mobility efforts in the country. It has .been funding research, design, development, demonstration projects and also spearheading the electric vehicle mobility initiative in the country.

Electric drive vehicles are becoming an attractive alternative to combustion engine cars with global gradual fossil fuel prices rise. To meet the performance requirements of the automobile market which is dominated by engine based vehicles, EV's design has to be light weight, durable and have long range. Chassis of the vehicle has considerable weight apart from batteries. A light weight and optimized design of chassis has been developed without compromising on adequate stiffness and strength. Various materials have been considered and evaluated. With the advancement of CAD & CAE tools design process has been simplified and virtual validation of the design can be carried out. Chassis is modelled in Solid works; Finite Element modelling (meshing) is carried out in Ansys Workbench and analyzed using Ansys Solver.

Index Terms

Electric Vehicle, Chassis Design, Design for Strength, CAD-Solid works, CAE, Ansys Workbench, HyperView

IOT Based Women Safety Device

Prof. Patel Jagdish A, Assistant Professor, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Srushti Dusane, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Saloni Thorat, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Mayuri Pawar, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India

Abstract:--

Nowadays women are facing many security problems in the society. In such cases, they feel handicap and need help to protect them. Even though many technologies have been introduced for women still kidnapping, eve teasing and sexual harassment are taking place in our country. When the women face into unsecured situations, to ensure the safety, automatic detection system needs to establish which send an alert message which includes the location. This can be done by sensing various factors such as abnormal sounds, body reaction like trembling, dreading and heartbeat which can be sensed using sensor and to provide the alert message, with the help of Internet of Things (IoT). In this paper, we surveyed the existing mechanism for detecting locations, for sending communications and collecting physical parameters of the human body using sensors.

Index Terms

Automatic detection system, Internet of Things (IoT), sensors.

Public Garden Automation Based on Solar Panel

Prof. Patel Jagdish A, Assistant Professor, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Pooja Malkar, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Anjali Hadekar, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India
Monika Wakchaure, Students, E&TC Engineering Department, SITRC, Nashik, Maharashtra, India

Abstract:--

Internal of things is a bridge between human & devices. In this paper automation of watering to cops & water tank has to be implemented. In this world automated technology takes place everywhere. For the aspect of making all system better, this system is designed for garden maintenance.

Nowadays misusage of electricity & water resources is a main problem. Sometimes due to carelessness of authorities, lamps are left ON which causes wastage electricity. Water wastage is another problem. To overcome this problem, our project helps to save electricity & water resources. Firstly microcontroller switches around 4:00pm, doing water supply to drinking water the gardens few hours before opening of garden for public. The garden gate is opened by running the motor unit which is driven by motor driver. Around 6:00pm, Lights are switches on depending on the output of LDR. Garden stay open for approximately 3 hours & by 8:40pm buzzer is sounded to point closing of garden & alert to visitors. The garden gate is closed at 9:00 & one of the two lamps is switches off. In morning all lamps are off depend on LDR result. Microcontroller is employed to control all actions of other devices.

Index Terms

Microcontroller ATMEGA32, soil moisture sensor, LDR, L293D motor

Rain Water Harvesting -An Effective Implementation in Coastal Area of Mumbai

Jyoti J. Nimje, PhD Student, Civil and Environmental Engineering Department, V.J.T. I
Abhay. S. Wayal, Associate professor, Civil and Environmental Engineering DepartmentV.J.T. I

Abstract:--

The rapid urbanization, economic activities, population growth are caused over extraction of groundwater which declining ground water level and insufficiency of water quantity for future use. The coastal areas of India are the densely populated areas and most of the oil refineries and industries are situated in coastal area. The country's coastal zones are the most developed and urbanized, and they depend on local fresh ground water supplies but due to the various activities and processing in the refinery causes soil and groundwater depletion. To overcome this rain water harvesting is the best solution but has been neglected. This study portrays the implementation of rain water harvesting at HPCL Mumbai Refinery located in coastal area of Maharashtra, India will be an effective solution. As per the field investigation, digitization process, Remote sensing and GIS and calculations total 38 locations are identified which is having rain water harvesting potential from roof top of buildings and other structures like crude tanks, substation etc. The potential of rain water harvesting from existing structures has been calculated as 1.45 lakh cubic meter within the study area to mitigate the outsourcing of water and also helps to improve the ground water recharge and quality of ground water.

Key words:

Coastal Area, Oil Refineries, Potential, Rain Water harvesting.

Artificial Neural Network Based Day Ahead Nodal Pricing

Kaustubh Rokamwar, Department of Electrical Engineering, Tulsiramji Gaikwad Patil College of Engineering. Nagpur, India
Prof. Pratik Ghutke, Department of Electrical Engineering, Tulsiramji Gaikwad Patil College of Engineering. Nagpur, India

Abstract:--

An electricity nodal price prediction normally recognized by 24-hour day-ahead nodal price forecast. In this paper first collected all physical and technical data i.e., availability of generation and their cost characteristics, real and reactive demands at various buses, transmission capacity availability at various conditions like peak and off-peak conditions. All these input data are used as input for computation of optimal power flow. The nodal prices are calculated with AC-DC optimal power flow methodology for IEEE 30 bus system. The resulted optimal real electricity bus voltages, nodal prices, reactive and real demands, angles have been given as inputs to Artificial Neural Network (ANN) for predict day ahead nodal prices.

Index Terms

Artificial Neural Network, Optimal Power Flow

Design of Cutting Machine and Improvement in Rejection on Foam Machine

Kunal.U. Shinde, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Gaurav Yeowle, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Sarvesh Navandar, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Prashant Wagh, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Payal Wagh, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.

Abstract:--

EPE foam Extrusion is a manufacturing process used to create objects of foam a fixed cross-sectional profile. A material is pushed through a die of the desired cross-section. A brief and concise review of the contributions made by the previous researchers in the area of foam extrusion process has been presented. foam processing needs the knowledge of basics of raw materials, additives, process control and finally the product properties required to finish end products. Foam materials have a useful combination of properties that can be modified for used wide range of applications. In foam, processing techniques can be classified into either batch or continuous process. Batch process includes injection moulding. Extrusion of foam is a continuous process. However, foam moulding is available both in batch and continuous process. In these days, continuous foam thermoforming machines are available along with extrusion process. However, the defects & process parameter improvement remains a greatly under-researched area and there is a real need to consolidate the best practices from foam extrusion research and industry, in order to increase its implementation. The goal of this project is to design & development of describe foam extrusion machine the which will reduce the problems in manufacturing. The description of project report includes a classification of foam extrusion, historical and recent applications, the production process and tooling characteristics, the main mechanical properties and the environmental sustainability. Throughout the project, focus will be placed on the optimization in foam extrusion production method. In this context, an innovative drying technique that utilizes concepts derived foam extrusion production technology is presented.

Index Terms

foam extrusion, product defect, production improvement, die design development.

Utilization Potential of Bagasse Ash, Lime Sludge, and Coal Fly Ash Blend in Concrete as Replacement of Ordinary Portland Cement

Ma. Catherine Q. Arca, Central Mindanao University

Abstract:--

The production of industrial wastes such as Bagasse Ash (BA) and Lime Sludge (LS) from sugar mills and Coal Fly Ash (CFA) from coal-fired power plants occupy valuable cultivable land and contribute significantly to environmental and ecological problems. This study aimed to evaluate the compressive strength of concrete using bagasse ash, lime sludge, and coal fly ash blend as Ordinary Portland Cement (OPC) replacements to help address the disposal problems regarding these industrial waste materials (IWM). All specimens underwent curing for 28 days, and the concrete mix was proportioned in accordance with the American Concrete Institute (ACI) Standard. The results showed that concrete cylinder specimens containing 10% and 25% replacements of blended bagasse ash, lime sludge, and coal fly ash (BLC) met the required Fc' of 20.7 MPa and 16.5 MPa, respectively, and could be potential replacements for OPC in structural applications. Meanwhile, specimens containing 50% BLC and 75% BLC with a lower water-cement ratio could be used in horizontal earth structures. The inclusion of BLC in concrete mixtures will result in economic savings. This environment-friendly endeavor will also help prevent waste accumulation and reduce carbon dioxide emissions.

Index Terms

bagasse ash, coal fly ash, compressive strength, industrial wastes, lime sludge

Explainable Machine Learning Prediction of COVID-19 Infection from CT scan images using GradCAM++

Madhavi. M, Research Scholar, School of Computing, SRM Institute of Science and Technology, KTR campus, Chengalpet, TamilNadu, India
Dr. Supraja. P, Assistant Professor, School of Computing, SRM Institute of Science and Technology, KTR campus, Chengalpet, TamilNadu, India

Abstract:--

COVID-19 is a contagious, communicable and fast spreading disease engendered by the Corona virus, SARS-CoV-2, is a respirational microorganism has given more challenges in human health, world economic level, social activities, education, business etc. With respect to the human health, the diagnosis of the COVID-19 is not as easy as like other diseases. Computed Tomography (CT) scan images are more easily accessible techniques for detecting the virus in a patient. Early diagnosis of COVID-19 dependent on chest CT empowers ideal treatment of patients and helps control the spread of the infection. In this paper, we proposed explainable deep neural networks (DNN)-based method Iterative Convolutional Neural Network ICNN for automatic detection of COVID-19 symptoms from Computed Tomography scan images of lungs. CT scan images are initially preprocessed and augmented. A binary classification for the detection of COVID-19 infection with two different architectures of iterative convolution neural network model was compared with InceptionV3 and DenseNet121 model. Gradient-guided class activation maps (Grad-CAM ++), a visual explanation method was used for highlighting the region of infection for interpretability of class-discrimination.

Index Terms

COVID-19, Deep Neural Network, Computed Tomography, GradCAM visualization.

An Analytical Comparative Study on Clustering Algorithm to Measure Quality among Clustering Algorithms

Mahesh K Varier, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India
Nikhila P N, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India
M G Thushara, Department of Computer Science and Applications, Amrita Vishwa Vidyapeetham, Amritapuri, India

Abstract:--

Clustering is an automated learning technique where a collection of objects are aimed to be organized into clusters where objects in the same and different clusters can be similar and dissimilar respectively. In this study, we propose comparative study between two clustering algorithms, to interpret the better clustering algorithms among the two. The paper compares two main approaches of document clustering that are Hierarchical clustering and K-Means clustering algorithm. To study the underlying techniques of the two clustering algorithms, we have taken identical data set for the comparison.

Index Terms

comparison,K-means,Hierarchical,clustering analysis.

Control Scheme Based on Quasi Z-Source Network for Four Switch Three Phase Brushless DC Motor

Manjeet Sakhare, M. Tech Scholar, TGPCET, Mohgaon, Nagpur
Radharaman Shaha, Head of the Department, TGPCET, Mohgaon, Nagpur
Vaishali Malekar, Assistant Professor, TGPCET, Mohgaon, Nagpur
Pratik Ghutke, Assistant Professor, TGPCET, Mohgaon, Nagpur
Anil Tekale, Assistant Professor, SVERI's College of Engineering, Pandharpur.

Abstract:--

Brushless DC machines are becoming the most preferred drive technology choice when compared to other electrical machines. The numerous benefits it offers, such as cheap maintenance, high efficiency, high power density, and robustness, are the reason for its appeal. With the help of Fuzzy Logic Control, a quasi Z-source network-based control system is developed in this research, which improves the utility ratio of DC voltage, extends the range of speed, and decreases torque ripples. During the inquiry, a novel architecture that combines a quasi Z-source converter with an FSTP drive circuit is introduced. The disadvantages of the FSTP BLDC motor were investigated, and QZFSTP BLDC simulations were created in MATLAB Simulink. In that study, the simulation results are obtained and analyzed.

Index Terms

BLDC Motor, Quasi Z-Source Network, Fuzzy Logic Controller, MATLAB/Simulink, torque ripple

Design of High Step-up DC/DC Converter and Switched-Capacitor Techniques for Renewable Energy Applications Using MATLAB

Sanjiwani Wasekar, Underpostgraduate Student, Department of Integrated Power System, Abha Gaikwad Patil College Of Engineering, Nagpur, Maharashtra, India
Sneha Tibude, Assistant Professor, Department of Integrated Power System, Abha Gaikwad Patil College Of Engineering, Nagpur, Maharashtra, India

Abstract:--

This paper proposes a design of high step-up DC/DC converter is presented for Renewable Energy Applications. The suggested structure consists of a coupled inductor and two voltage multiplier cells in order to obtain high step-up voltage gain. In addition, two capacitors are charged during the switch-off period using the energy stored in the coupled inductor which increases the voltage transfer gain. The energy stored in the leakage inductance is recycled with the use of a passive clamp circuit. The voltage stress on the main power switch is also reduced in the proposed topology. Therefore, a main power switch with low resistance RDS can be used to reduce the conduction losses. The operation principle and the steady-state analyses are discussed thoroughly. To verify the performance of the presented converter, laboratory prototype circuit is implemented. The results validate the theoretical analyses and the practicability of the presented high step-up converter. These converters boost the low input voltages (24-40 V) to a high voltage level (300-400 V).The simulation will be carried in MATLAB/SIMULINK and results will be presented to validate the claim.

Index Terms

DC/DC Converter, Coupled Inductor, Passive Clamp Circuit, Steady-State Analyses Renewable Energy

Product Recommendation System Using Machine Learning Based Collaborative Filtering Technique

Mrunal Gandhi, Undergraduate student, Computer Engineering, SIEM, Nashik
Tushar Nikam, Undergraduate student, Computer Engineering, SIEM, Nashik
Akshay Shahane, Undergraduate student, Computer Engineering, SIEM, Nashik
Mayur Shete, Undergraduate student, Computer Engineering, SIEM, Nashik
Dr. Kamini Nalavade, HOD and Professor, Computer Engineering, SIEM, Nashik

Abstract:--

The idea of efficiently locating one's favorite product in a vast dataset of application database has become a crucial challenge to handle for online content providers in order to attract the masses as compared to their competitors in today's current period of information technology. Recommender systems, also known as recommendation systems, are information filtering systems that are typically connected with a variety of consumer and commercial applications. These systems operate as a link between numerous content providers, such as social media websites, e-commerce portals, streaming platforms, and app users, by proposing items from the app database that match the user's tastes and previous activity. Such customized solutions are especially useful when the user is unsure what they are looking for. The 'Because you watched' header on Netflix, the 'People you may know' section on Facebook, and the 'Customers who bought this also bought' division on Amazon are all examples of these algorithms permeating every facet of our life.

Index Terms

Datasets evaluation and analysis, genre, information storage and retrieval, machine learning algorithms, rating, recommender engine, recommendation techniques and types, user's preferences.

Vibration Analysis of Cantilever Beam of Magneto Rheological Fluid

Snehal Vitthal Patil, M. Tech Student, Sanjeevan Engineering and Technology Institution, Panhala, Maharastra, India
Dr. Gajanan C. Koli, Assit. Professor, Mechanical Engineering, Sanjeevan Engineering and Technology Institution, Panhala, Maharastra, India

Abstract:--

This study presents techniques used to minimize an active vibration in smart beam. It consists of an aluminum beam model in cantilever configuration. Magneto Rheological fluid (MRF) has variety of application in all industrial vibration control system. Now-a-days this fluid is used in design of buildings and bridges, robotics, home appliances, seat suspensions, clutches, automobile suspension etc. The main purpose of MRF used in this application because of ability of MR fluid i.e. when an magnetic field applied it changes rheological properties rapidly and its precise controllability. By detecting the vibration produced in any application we can apply this concept of vibration control to that system. We can use quantity of fluid depends on dimension of MR pocket and intensity of vibration in system. The testing is all about the reduction in the amplitude of vibration of system by increase in applied voltage to MR cantilever beam (MRF-336AG).

Form the table and graph; we conclude that when amplitude of vibration decrease, magnification factor also decreases. When damping increases, damping coefficient is increases and transmissibility decreases. Hence vibration is reduces.

Index Terms

Cantilever Beam, Vibration, MR Fluids, FFT analysis.

A Novel Of A New Hybrid Concept Upfc Control Design For Voltage &Power Flow Control On Neuromodelling System Using Matlab

Shradha Dhargave, MTech, Department of EE Engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur.
Pratik Gutke, Assistant Professor , Department of EE Engineering, Tulsiramji Gaikwad-Patil College of Engineering & Technology, Nagpur.

Abstract:--

Electric power system regularly face troubles because of, dynamic nature and also high-power quality because of, in relation to greater amount of nonlinear load. So there is need to keep inside limits these difficulty and makes good the issues of power quality. A Flexible Alternating Flow Transmission System (FACTS) is a framework made out of static gear utilized for the AC transmission of electrical energy. Unified Power Flow Controller (UPFC) is the newest facts device which combine together series and shunt compensator properties and it is able of scheming reactive and active power of transmission line. In this paper, Unified Power Flow Controller (UPFC) is utilized to diminish voltage sag and swells. UPFC is designed on the base of rectifier and inverter. The actual and reactive forces change at the receiving end by changing the control angle. MATLAB/Simulink is used to enhance power quality by the application of UPFC.

Index Terms

FACTS, Voltage Sags, Voltage swells, power quality, Reactive power, UPFC.

Comparative Analysis of Image De-noising in Ultrasound Images of Ovarian Masses

Smital D. Patil, Research Scholar
Dr. Pramod J. Deore, Research Guide

Abstract:--

Removing noise from the original ultrasound image is still a challenging problem for researchers working in medical imaging. Medical Image de-noising is a very challenging task because, in medical images, noise has to be removed without loss of image features that are important for diagnosis. The development of an effective noise removal algorithm is one of the important concern in medical imaging. One of the critical issues concerned with women's health is ovarian abnormalities like ovarian cyst, masses, and polycystic ovary (PCO). Ovarian cysts are needed to be properly diagnosed in females to take accurate decisions at the right time. This paper aims to implement and compare various medical image de-noising techniques. A machine learning approach has been applied on some noise removal algorithms for image de-noising in ultrasonography images of ovarian cysts and follicles. Experimental results reveal that Block matching 3-D filter gives better performance amongst all algorithms.

Index Terms

image de-noising, ovarian cysts, machine learning.

Switching Action Study of Bismuth-Graphene Based Top-Gated Spin-Field Effect Transistor

Neetu Gyanchandani, JD College of Engineering and Management, Nagpur 441501, India.
Santosh Pawar, School of Engineering, Dr. A.P.J. Abdul Kalam University, Indore 452016, India
Prashant Maheshwary, JD College of Engineering and Management, Nagpur 441501, India.
Kailash Nemade, Department of Physics, Indira Mahavidyalaya, Kalamb 445401, India.

Abstract:--

This work reports the switching action study of Bismuth-Graphene (Bi-Graphene) Based Top-Gated Spin-Field Effect Transistor (s-FET).The magnetoresistance (MR) study was performed as a function of gate voltage at room temperature to analyze the change in amplitude modulation of MR curve.Study outcom shows that MR monotonically reduces as a function of gate voltage. Switching action in s-FET was analyzed and found that Bi-Graphene based s-FET shows appropriate switching action.

Transmission Fault Detection Using Synchrophasorhasors

Neha Vijay Khadse, Department of Electrical Engg, Tulsiramji Gaikwad-Patil College Of Engg
Prof.Radharaman Shaha, Department of Electrical Engg, Tulsiramji Gaikwad-Patil College Of Engg

Abstract:--

The accuracy in fault detection is always a challenge for a power system engineer. The most commonly used protection scheme for transmission line protection is the distance protection also known as impedance protection. The impedance seen by relay is sensitive to fault resistance, arc resistance, also the atmospheric effects, which results in over reach or under reach. So the distance protection is unable to meet the desired reliability because of mal-operations. As we know the current differential protection has the highest reliability among all types of protection scheme, but it is not being used for transmission line protection because of certain problems such as CT ratio mismatch, pilot wire length, tap changing transformer etc. It is known as the unit protection used to protect generator, transformers, sometimes current differential protection is used for feeder protection but again the time reference used there is the local one which has the synchronization accuracy of 1-10ms which is the main factor that it is not being used for transmission line protection.

This paper gives the details about the synchrophasor technology which uses the GPS based time synchronization having the accuracy of the order of 1μs. Here we have explored the flexibility of the synchrophasor technology based current differential protection in Matlab simulink and presented the results for all types of faults with different fault resistance, inception angle, and fault location, and it is observed the current differential protection using synchrophasor technology has almost the 100% reliability.

Also, apart from fault detection there is a great challenge of fault location. Presently the algorithms which are being used for fault location requires the transmission line parameters and it is know the transmission line parameters cannot determined accurately, the measured impedance is sensitive to the fault resistance, arc resistance and atmospheric conditions. To overcome this problem we have used an algorithm which does not require the transmission line parameters to locate the fault. This technique uses samples of voltage and currents from both the end of transmission line. The complete fault location analysis has been presented in this dissertation report, it is observed that the fault is located accurately and it is independent of fault resistance.

Epidemic and Epileptic Seizure disease prediction and Classification using Convolutional Neural Network

Poonam Rana, Department of Computer Science, ABES Engineering College
Dr. Vineet Sharma, Department of Computer Science, ABES Engineering College
Dr. Pradeep Kumar Gupta, Department of Computer Science, ABES Engineering College

Abstract:--

As we know that various Diseases and various types of cancer is prevailing now a days. Deep learning has played a significant role in healthcare domain. Even the deep learning architectures, algorithms and frameworks have transformed the traditional way of predicting and classifying disease in healthcare sector. Now days with the help of deep learning architectures we talk about precision medicine and stratified healthcare. This paper applied the Deep Learning Convolutional Neural Network ,learning architectures, algorithms in medical data This analysis revealed that Convolutional Neural Networks, Deep Belief Networks , Stacked Auto encoders, Restricted Boltzmann Machines, Recurrent Neural Networks has main application in predicting and classifying disease in an effectively manner. This paper presents how Convolutional Neural network can be applied in prediction of Epileptic seizure detection and Epidemic and then calculating the classification accuracy with the help of metrics like accuracy, precision, ROC curve. Firstly the data has been collected, then data preprocessing techniques have been applied, then removed noise from the data, then training test split has been performed, we have divided the datasets into training and testing data in the ration of 80% has been allocated for training, 20 percent has been allocated to testing datasets, then build the CNN model, train the CNN model and then test the CNN Model and then visualization has been performed.

Index Terms

Deep Learning, Convolutional Neural Network, Epidemic and Epileptic Seizure detection.

Entry System for Disable Passengers In Trains

P.M. Sutar, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Kunal Ajage, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Abdul Ahad Khan, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Gaurav Chavhan, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Lokesh Khairnar, Assistant professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.

Abstract:--

Indian railways run dedicated trains for handicapped passengers in different parts of India. But the trains which are allocated for handicapped persons do not have proper system or device for passengers to board the train by themselves. They have to board train with the help of train cure. In this research an effort has been made to make handicapped passenger self-sufficient to board and onboard the train. The compact convertible ramp work on scissors extension mechanism powered by pneumatic or electric actuator. The ramp can handle weights up to 250 kg. It can compact and fit in train's inner compartment which makes it more aerodynamic than regular stairs. It will also be convenient for children's and senior citizens as ramp covers the gap between platform and train makes it easier for passengers to board train. The existing or next generation of trains can apply certain type of systems with minimum modification to make boarding and unbarring trains safe and with minimum efforts.

Index Terms

train, handicapped passengers

Experimental and FEA of Automotive Composite Leaf Spring Shackle

Prashant Pattar, Savitribai Phule Pune University

Abstract:--

Leaf spring shackle component is used in leaf spring suspension systems in many four wheelers, multi-wheeled vehicles. The free-hanging part called leaf spring shackle lets the leaf springs stretch & adjust in move. The crucial component shackle adjusts shape when leaf springs are enlarged to a certain length. So if there is no shackle, the spring will become stiff and its operation as a suspension system will get obstructed. The arrangement tends to tensile, bending, shear and proof loads. If this component fails in the vehicle it will leads to vehicle suspension system failure & vehicle disaster. The study is carried out on static loading condition on the shackle, so that stress distribution cans be observed for analysis of high stress zones. Stresses are found out when loaded under longitudinal, vertical are considered here, the aim is to increase strength to bear the loading capacity and optimizing the existing design of Leaf spring shackle, using composite material is one of the options to achieve the desired outcome. Performing Shackle Optimization under static load conditions according to industry standard. Using topology optimization methodology. Included with literature review to support the importance of this analysis, optimization for the applied loads on Shackle. Experimental investigation of new Leaf spring shackle will be done by strain gauge technique and UTM. Finite element analysis of new optimize Leaf spring shackle will be done using ANSYS workbench. Comparative analysis of FEA and Experimental will be done for validation of work

Design and Fabrication of Automated Waste Segregation Machine

Ahmeddraza H. Ansari, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik, India
Dr. Dnyandeo D. Shinde, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik, India
Nikita V. Gupta, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik, India
Dhruv P. Kansara, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik, India

Abstract:--

The rapid growth in the population has also led to the surge in the volume of waste being generated on a daily basis. This increase in the generation of waste due to continuous growth in the urbanization and industrialization has become a severe problem for the local and the national government. It is also posing a serious problem for the local authorities to manage the wastes being dumped everywhere as landfill. To ensure the minimal risk to the environment and human health, it is necessary to take meticulous measures when segregating and transporting waste. Segregation of waste in a proper manner brings to the limelight actual economic value of the waste.

Keywords

Arduino, reduce human efforts, new technology

New product design and development of Sheet metal Pulley with high load carrying capacity to sustain higher RPM

Pratik Chaudhari, Post Graduate student DPCOE
Prof Maheshwer C, Assistant Prof. Mechanical Engg. Dept. Dhole Patil College of Engineering, Pune
Prof Ketan Dhumal, Assistant Prof. Mechanical Engg. Dept. Dhole Patil College of Engineering, Pune

Abstract:--

A pulley on a car, is slightly different, it is commonly used to transmit power from one point on the engine to another, as it is lighter and quieter than using a chain or a pile of gears.A Pulley is one of the oldest devices ever made, it is simply a part that either allows a rope to move in two directions very smoothly, or can be used in multiples to ease lifting loads, for instance someone with a set of pulleys can lift a large weight with only a fraction of the actual weight needed based on the actual number of pulley wheels used. Basically, a belt either lined with teeth or simply a v shape is placed over the center of the pulley and tightened, the friction of the belt due to its tightness transmits the turning force (torque) from one pulley to another, therefore moving the power from one pulley to another.

Index Terms

Power, Sheet Metal, Torque, Dynamic Loads.

A Review paper on Number Plate Recognition by using Matlab

Pritee Vijaykumar Bandal, ME Student of Electronics and Telecommunication Engineering, CSMSS CHH. Shahu. College of Engineering, Aurangabad
Assist. Prof. M. G. Nakrani, Assistant Professor at Electronics and Telecommunication Engineering, CSMSS CHH. Shahu. College of Engineering, Aurangabad
Dr.U.B.Shinde, Principal, CSMSS CHH. Shahu. College of Engineering, Aurangabad

Abstract:--

Automatic Vehicle Plate Recognition (AVPR) is the extraction of vehicle license plate information from an image or sequence of images. From the past thirty years, AVPR is becoming the challenging and interesting area of research. AVPR systems include a wide range of applications. Numerous real-world applications such as electronic toll collection, automatic parking management, access control, radar-based speed-control, border control, criminal pursuit, traffic law enforcement, etc. have been benefited from it. A lot of commercial AVPR systems are available today and yet there are many challenges and issues in accurate recognition of license plates. In India, number plate standards are rarely practiced. License plates recognition has many problems like unnecessary text, different font size and font type, blur, skew, environmental factors etc. The variations of the license plate types or environments cause challenges in the recognition of number license plates. The major objective of this thesis is to develop a robust, accurate and reliable automatic vehicle license plate recognition system. Our suggested approach is performed in three phases: In the first phase, the input image is pre-processed. Character regions are extracted in the second phase, and in the third phase, recognition of extracted characters is performed. The present work has been performed to recognize Indian license plates.

Index Terms

Vehicle Number Plate Detection, Segmentation, Dilation, Template Matching

Experimental Testing and FEA Analysis of Composite Car Front Bumper

P. R. Deshmukh, Student, Department of Mechanical Engineering, MES College of Engineering, Wadia College Campus, Pune, India
R. N. Yerrawar, Professor Department of Mechanical Engineering, MES College of Engineering, Wadia College Campus, Pune, India

Abstract:--

Car bumper beam is auxiliary segment of a car vehicle which is intended to forestall or reduce physical damage to the front or backsides of traveler engine vehicles by engrossing the effect vitality and circulating the pressure opposite to the heading of effect. Alongside the job of security, eco-friendliness and outflow gas guidelines are in effect progressively significant as of late that urge the maker to lessen the heaviness of traveler vehicles. The point of this examination is to upgrade the presentation of frontal effect pillar (FIB) by improving the basic parameter utilizing crash and modular investigation. It is proposed to make FIB utilizing Glass Fiber Epoxy (GFE) Hybrid composite material. New composite is created to fit the structure parameter. At long last, got properties of (GFE) Hybrid composite material is utilized for recreation and modular examination and results have been confirmed with existing FIB material. The cautious structure and investigation of FIB parameters using ANSYS software are completed so as to improve the quality, and decrease the weight. The outcomes show that material can limit the bumper beam avoidance, impact power and stress distribution and furthermore boost the flexible strain vitality.

Key words:

Car front bumper, FEA, Glass Fiber Epoxy, Modal analysis.

Power Generation on Highways using Vertical Axis Wind Turbine and Solar Energy

Prof. Mosam K. Sangole, Sandip Institute Of Engineering And Management (SPPU)
Prof. Yogesh Risodkar, Sandip Institute Of Engineering And Management (SPPU)
Kshitij Dilip Ghodekar, Sandip Institute Of Engineering And Management (SPPU)
Rahul K. Sharma, Sandip Institute Of Engineering And Management (SPPU)
Aditya Santosh Shahane, Sandip Institute Of Engineering And Management (SPPU)

Abstract:--

Renewable energy reliability has been the main agenda of country nowadays, where the internet of things (IoT) and Industry 4.0 are crucial research way with a lot of opportunities for improvement and challenging work. Data obtained from Internet of Things is converted into meaningful information to improve and monitor wind turbine and solar performance, driving wind energy cost down and reducing hazard. However, the actual implementation in Internet of Things is a very challenging task because the wind turbine system level and component level need real-time control. So, this paper is dedicated to investigating wind resource assessment and lifetime estimation of wind power modules using IoT. To illustrate this issue, a model is built with sub-models of an aerodynamic rotor connected directly to a multi-pole variable speed permanent magnet synchronous generator (PMSG) with many various sensors for measurement of energy stored in battery are integrated with IoT. Actual work is constructed with ESP32 Microcontroller and Google Cloud service. IoT has consistently proved to increase the reliability of measurement strategies, monitoring accuracy, and quality assurance.

Index Terms

vertical Axis wind turbine, solar panel, Internet of Things.

A Review paper on Design and Fabrication of chassis Dynamometer for Electric Two-wheeler

Prof.S.B.Ambekar, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg. and Mangement, Nashik
Anway Thete, Under Graduate Student Mechanical Engg. Dept
Shubham Nerkar, Under Graduate Student Mechanical Engg. Dept
Mohan Ahire, Under Graduate Student Mechanical Engg. Dept
Ajinkya Khairnar, Under Graduate Student Mechanical Engg. Dept

Abstract:--

The utilization of dynamometers (dyno for short) in transportation execution testing is the same old thing. Indeed, the soonest recorded creation and utilization of a dyno traces all the way back to 1828.In ongoing years, electric bikes are arising as one of the choices to work on the supportability of transportation energy and air quality, particularly in metropolitan regions. Albeit electric bike bikes are harmless to the ecosystem, they fail to meet expectations contrasted and gas bikes in numerous regards, especially in speed and voyage distance among refueling and re-energizing. Thusly, the motor advancement program should be possible with a dynamometer. Factors, for example, the state of force and force bends can be investigated. Henceforth, this venture is intended to foster a suspension dynamometer that can be utilized to gauge mechanical force, speed and force, and give a controllable burden to the electric bike being tried. Fundamental execution prerequisites of an electric bike which comprise of most extreme speed, driving reach and speed increase

Implementation of Transfer Learning Technique On Raspberry-Pi with Tensorflow

Prof. Dipak Patil, Professor at Depart. of Electronics and telecommunication, Principal at Sandip Institute of Engineering and management,Nashik
Prof. Amit Mishra, Professor at Depart. of Electronics and telecommunication, Principal at Sandip Institute of Engineering and management,Nashik
Neha Bhagat, Student at Depart. of Electronics and telecommunication, Sandip Institute of Engineering and management, Nashik
Akash Shinde, Student at Depart. of Electronics and telecommunication, Sandip Institute of Engineering and management, Nashik
Asiya Patel, Student at Depart. of Electronics and telecommunication, Sandip Institute of Engineering and management, Nashik

Abstract:--

In this new era of automation & artificial intelligence, identifying objects automatically is most important. Image classifiers plays important role in object identification & detection.
A high performing image classifier needs huge amount of data & time & processing power for training to get better accuracy. But with Transfer Learning, it is possible to create high accuracy classifier with small dataset's, less time & with less processing power.
A machine learning library by google, named Tensorflow is the most advance machine learning library with huge number of features. In robotics & automation, independent processors like Raspberry-Pi has wide scope with capability to run image classifiers & Tensorflow.

Index Terms

artificial intelligence, Tensorflow, Raspberry-Pi.

Optimization and Testing of Spot Welds on Moped Steel Wheels

Prof.S.M. Mahajan, Assistant Prof.Mechanical Engg. Dept. Sandip Institute of Engg.And Management, Nashik
Akshay Patil, Under Graduate Student Mechanical Engg. Dept
Siddhant Pawar, Under Graduate Student Mechanical Engg. Dept
Rohit Parolekar, Under Graduate Student Mechanical Engg. Dept
Vishal Suraywanshi, Under Graduate Student Mechanical Engg. Dept

Abstract:--

In this paper we are representing the work done on automotive wheel where optimization is done using multiple parameters and objectives. Main objective is to reduce spot welds on wheel so as to increase productivity. We used FEA method as optimization method. Also, for validation purpose we used Wheel method.

Index Terms

Wheel, Analysis, Optimization

IoT Based Electrical Pole Safety System

Rahul Devendra Mashalkar, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Akshay Manoj Arsule, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Deep Manoj Chaudhari, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Swati Gade, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India

Abstract:--

Leakage current through the supporting structure of overhead transmission and distribution system causes accidents. Humans or animals passing close to the pole structure may be shocked, and if the leakage current is significant, it may result in death. Manually detecting the site of a fault has limitations in terms of accuracy, time, and expense. In this paper, a unique approach for automatically detecting the fault location is proposed. The system is equipped with the internet of things (IoT) technology, allowing it to instantly notify the fault and its location to the relevant authorities. It consists of a remote telemetry system in which IoT transceivers are used to detect electrical line breakage. The location of the line broken will be sent to the authorities using IoT technology. To enhance the safety of civilians and animals the system is password protected which is known to only the lineman of that area. The system is made fully automated by using switching relays and microcontrollers.

Keywords

IoT, Live monitoring, Fault detection, Fault location, Linemen safety

Autonomous waste garbage management system for smart cities

Rohit Hitendra Sonawane, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Chetan Ravindra Milmile, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Divyani Yuvraj More, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India
Swati Gade, Electrical Engineering Department,Sandip Institute of Engineering and Management, Nashik-422213, India

Abstract:--

Improper garbage collection and disposal are creating the problem of ever-growing trash stocks. Many metro cities are facing major issue of garbage collection and disposal and required lots of manpower. This paper presents a system helps to collect garbage in metro cities to solve this problem. An autonomous trash collector vehicle which collects trash lying on ground in a trash-storage unit attached to it can be a feasible solution to the problem. In this system trash detection done via image processing and deep learning techniques. An ultrasonic sonar sensor on the robot detects object along the path and a comers module sends images of the trash to a controller for classification into trash or not trash. The main advantages of this garbage collection vehicle are low-cost and can detect a wide range of trash with high accuracy. Therefore, it has good environmental as well as economic impact.

Index Terms

Garbage robot, Trash detection, Deep Learning, ultrasonic Sensor, smart city

Valuation of Property by Cost Approach & Market Approach-Case Study

Rohit Chopada, Civil Department, Sandip University Nashik, India
Prof. Swati Patil, Civil Department, Sandip University Nashik, India

Abstract:--

Valuation can be defined as the process of estimating the fair market value of property such as commercial, residential agricultural land and industrial. Value is determined on the basis of its selling price and rent or income it can fetch. The purpose of this study is to introduce people with general field practice of valuation of real estate property. This study is based on systematic research in the field of valuation. The study includes comparing valuation of property by cost approach and market approach. This study covers the methodology verified by the government approved valuer and concerned field expert. The objective of this study is to identify the market value of building.

Index Terms

Cost Approach, Field practice, Market approach, Methodology, Valuer.

Subtitle Generation and Video Scene Indexing using Recurrent Neural Networks

Sajjan kiran, Computer Science Department, R.V. College of Engineering
Umesh Patil, Computer Science Department, R.V. College of Engineering
Siddarth Shankar , Computer Science Department, R.V. College of Engineering
Dr. Poonam Ghuli, Computer Science Department, R.V. College of Engineering

Abstract:--

Video Subtitles are not only an essential tool for the hearing impaired, but also enhance the user's viewing experience, as they allow users to better understand and interpret different accents, even though they are of the same familiar language. Automatic Speech Recognition Systems would also eradicate the strenuous mechanical process involved in creating subtitle files for movie videos. Searching and indexing of different scenes in a video is still far behind when compared to that available for other forms like text data. With the help of Video Captioning models, we can significantly improve the accessibility and indexing requirements of video files thus allowing users to search for a particular scene/event in a video.
In this paper we will be discussing the solution to these requirements with the help of Sequence-to-Sequence Recurrent Neural Networks. The paper also includes techniques involved in preprocessing audio data and extracting features from them, the network architectures, CTC algorithm for backpropagation of error through time, suitable evaluation metrics for Sequence-to-Sequence models and the challenges involved during the design and training of such models.

Index Terms

Speech Recognition Systems, Video Captioning, Sequence-to-Sequence models, Mel Frequency Cepstral Coefficients, Long Short Term Memory, Gated Recurrent Units, Encoder-Decoder Transformer, I-frames, Word Error Rate, Connectionist Temporal Classification algorithm.

Object Detection and Tracking Using Deep Learning

Sanket P. Kanzarkar, Department of E&TC, D Y Patil School of Enginnering Lohegaon, Pune,India
Rashmi P. Mahajan, Department of E&TC, D Y Patil School of Enginnering Lohegaon, Pune,India

Abstract:--

This method proposes faster, light weight and more precise approach for Object Detection and tracking of objects. Object detection is a very important task for different applications including autonomous car, face detection, Person Detection, video spying, medical imaging, traffic movement analysis, self-driving cars, people counting, etc. The main focus is to track real time object. Among most computer vision-based approaches we can prefer the deep learning-based algorithm for their efficiency. It is challenging task to develop such robust model due various external factors like lightning condition, motion blur, pose variations, occluded behind other objects, crossing trajectories and many others. Improper training ofmodel due to a smaller number of data or less iterations leads in less accuracy. Deep learningbased algorithm could be a great solution for object detection with high accuracy.

Index Terms

Object Detection, Object Tracking, Deep Learning, Transfer Learning

Smart Street Light & Power Saving By Using Dimming Concept

Prof. Pramod Aswale, Department of E&TC, SIEM, Sandip Foundation's, Nashik, India
Prof. Yogesh Risodkar, Department of E&TC, SIEM, Sandip Foundation's, Nashik, India
Amit N. Kolhe, Department of E&TC, SIEM, Sandip Foundation's, Nashik, India
Mayur R. Rane, Department of E&TC, SIEM, Sandip Foundation's, Nashik, India
Shailesh D. Patil, Department of E&TC, SIEM, Sandip Foundation's, Nashik, India.
.

Abstract:--

In this project, we devised a system which focuses reducing the power consumption by street light it mean an electronic circuitry that uses Led Light Driver, Arduino, Keypad and RTC as a major component. This system is applicable in domestic as well as in industries scenario an efficient use of this system lies in handling. All of us use energy every day for transportation, cooking, heating and cooling rooms, manufacturing, lighting, and entertainment. The choices we make about how we use energy turning machines off when we're not using them or choosing to buy energy efficient appliances impact our environment and our lives.

Index Terms

Arduino, RTC, Led Light Driver, GSM, LCD.

Open and Closed Loop Analysis of BLDC Motor

Sheikh Mohammad Sajid, Department of Electrical Engineering Shri Ramdeobaba College of Engineering and Management Nagpur, India
Gaurav Goyal, Department of Electrical Engineering Shri Ramdeobaba College of Engineering and Management Nagpur, India

Abstract:--

The cost of the Brushless DC Motor (BLDC) has declined since its presentation, because of progressions in materials and design. Higher torque to weight ratio because of rare earth magnets and have higher flux density limit. The absence of brushes and commutators reduces maintenance costs. These entire characteristics make BLDC motor popular. In this paper, we discussed the mathematical model of the BLDC motor and extract the specification of the HPM48-5000 BLDC motor from the datasheet. We also discussed open-loop and closed-loop control of the BLDC motor. The closed control can be done using voltage-controlled controller, current controller, and pulse width modulation (PWM) controller is discussed and done simulation using MATLAB/Simulink.

Index Terms

BLDC motor, Voltage Controlled Controller, Current Controller, PWM controller, Speed control and MATLAB/Simulink.

Comparative Study of Temperature Prediction Using Different Machine Learning Algorithms

Shraddha K. Nikam, Savitribai Phule Pune University, College of Engineering Pune (COEP),Shivajinagar 411005 Pune, Maharashtra, India.
Dr. Sunil B. Mane, College of Engineering Pune (COEP),Shivajinagar 411005 Pune, Maharashtra, India

Abstract:--

Temperature is a widely used meteorological variable that plays a significant role in the community, in agriculture and in the economy. Weather data is unstable in nature that makes weather forecasting less accurate. Weather forecasts can be more accurately achieve with the use of machine learning and deep learning models. In this paper, propose an intelligent temperature predicting system. JFK airport weather dataset from NOAA is used for temperature prediction, the system predict the temperature using different algorithms like Random Forest, Multilayer Perceptron (MLP), LSTM Vanilla, LSTM Bidirectional and LSTM Stacked and also compare the results of temperature prediction of different algorithm by the use of accuracy and root mean squared error (RMSE). LSTM stacked gives better accuracy and lower RMSE value compare to other algorithms.

Index Terms

Deep Learning, Long Short Term Memory (LSTM), LSTM Bidirectional, LSTM Stacked, LSTM Vanilla, Machine Learning, Multilayer Perceptron (MLP), Random Forest

Analysis on Progressive Tool For Washer

Prof. Ashish P Borhade, Professor of department of mechanical engineering, SIEM Nashik
Shubham N. Kapse, Undergraduate student, Department Of Mechanical Engineering, SIEM, Nashik
Shubham S. Mitke, Undergraduate student, Department Of Mechanical Engineering, SIEM, Nashik
Vivek R. Khamkar, Undergraduate student, Department Of Mechanical Engineering, SIEM, Nashik
Shubham A. Patil, Undergraduate student, Department Of Mechanical Engineering, SIEM, Nashik

Abstract:--

A washer is a thin plate which is used to distribute the load of a threaded fastener, as a screw or nut. In automotive engine component is made up of split or spring lock washer in which washer is used. At a one-point ring split which bent into helical shape. The steel washer is a critical safety component for automobile engine and its failure may cause severe safety issue. The washer undergoes different process lines Wire Rod, Drawing, Annealing, Pickling, Flattening, Spring Washer, Single Spring Washer before subjecting to manufacturing. To find out the metallurgical soundness and surface quality of the washer after manufacturing of washer

Wall Climbing Robot For Inspection Of Composite Materials

Soham Bharambe, Department of Mechanical Engineering,Sandip Institue of Engineering and Management
Tushar Patil, Department of Mechanical Engineering,Sandip Institue of Engineering and Management

Abstract:--

The research area of wall climbing robots (WCR's) has gained interest over the years as a promising approach to remote inspection and maintenance of big and hard to reach spaces. The development of reliable WCRs with Inspection capabilities would significantly cut maintenance costs in areas where manual inspection times are high and the worker security might be compromised. In these times human safety is at most important. WCR's with a visual feed back system can improve inspection quality also it wont hamper human safety. Also considering the point that manual inspection takes long time the using of WCR's can speed the process. Also WCR's working on negative pressure thrust system can work as key factor in improving industrial security.

A Review Paper on Efficiency Enhancement of Solar Panels

Shelke Gajanan N, Professor, Mechanical Engineering Department, SIEM, Nashik
Nigudkar Vedant S, BE Mech.Students, SIEM, Nashik
Patil Deepanshu H, BE Mech.Students, SIEM, Nashik
Kulkarni Kaustubh P, BE Mech.Students, SIEM, Nashik
Mishra Namit.R, BE Mech.Students, SIEM, Nashik

Abstract:--

Green technologies are becoming more and more common now days. Thousands of photovoltaic (PV) panels and solar collectors have been installed all over the world. Photovoltaic solar cell generates electricity by receiving solar irradiance. The temperature which a PV module effectively works is an equilibrium point temperature between the heat generated by the PV module for maximum efficiency and at the same time some of the heat losses to the surrounding environment. The temperature of photovoltaic modules increases when it absorbs solar radiation, causing a decrease in efficiency. This undesirable effect can be partially avoided by applying a solar panel cleaning unit with fluid circulation on the photovoltaic module. The desire to increase the effectiveness of PV panels led to the development solar PV collectors systems. Similarly accumulation of dust causes reduction of efficiency. This review paper discuss about the different methods of efficiency enhancement of solar panels.

Keywords

efficiency, temperature increase, dust accumulation, efficiency enhancement.

Synthetic Aperture Radar Image Analysis for Change Detection

Sushant J. Pawar, Research Scholar, Savitribai Phule Pune,University Pune, India
Sanjay T. Gandhe, Sandip Institute of Technology & Research Centre Nashik, India

Abstract:--

Object change detection in SAR image data is a significant application within the wide area of remote sensing like deforestation, maritime surveillance, defense, civilian sector for security application as well as for disaster management. SAR images are intrinsically affected by the speckle noise & strong clutter interference, making it challenging to detect changes in SAR. Also, an environmental challenge for detection in SAR includes image quality and camouflage, sensor-based challenges includes restricted resolution, image process indicant, miniature or sparkling objects indications. This hamper on the signal to clutter noise ratio, which plays a significant role in the object change detection. Various techniques & methods are presented in the literature to deal with these challenges, which leads to further research in change detection using SAR images.

This paper emphasis on a major issues in the interpretation of SAR image related to object change detection representational processes and related issues in SAR images

Key words:

Object change detection, Range Cell Migration, Radar Cross Section, Synthetic Aperture Radar image, Speckle noise, Signal to clutter noise ratio

Deep learning proposition for Pneumonia detection in Chest X-Ray

Yogesh Risodkar, E&TC Dept.,SIEM
Mosam K. Sangole, E&TC Dept.,SIEM
Saylee Khotre, E&TC Dept.,SIEM
Swapnil Raut, E&TC Dept.,SIEM
Pooja Ahire, E&TC Dept.,SIEM
Prajakta Joshi, E&TC Dept.,SIEM

Abstract:--

Pneumonia is a disease where a person gets infected by viral and bacteria that cause damage in lungs and that's the reason where there are deaths among all age groups in the world. Analyzing chest X-rays is tough and requires precise results to save patient's life. The symptoms in children may include continuous vomiting, and severe temperature. Usually bacterial and viral resembles same symptoms. The design should have an objective to obtain accurate diagnosis to determine that patient is suffering from pneumonia with the help of chest X-ray image analysis and to increase the overall accuracy of the system. Hence, we have proposed deep learning model that is Sequential Conventional Neural Network (CNN) model to train an AI algorithm that analyzes chest x-ray images and detects pneumonia.

Also most of research is done only on the binary classification (i.e. pneumonia positive and negative) but we will be developing classification of viral and bacterial pneumonia. The importance of this research is to help better diagnose the pneumonia patients by being reasonably accurate helping hand for doctor in this recent Covid-19 situation and providing them with much better insight on what the type of infection so that the doctors can treat the patients effectively.

Index Terms

Image Processing, Deep Learning, Data Augmentation, Chest X-ray, Pneumonia Detection

Modeling of Resonance Frequencies for the Four Tooth Shaped Microstrip Antenna Using Neural N etworks

Zufar Kayumov, Faculty of mechanical engineering, Pune university, Maharashtra, Sandip institute of engineering and management, Nashik.
Dmitrii Tumakov, Faculty of mechanical engineering, Pune university, Maharashtra, Sandip institute of engineering and management, Nashik.
Angelina Markina, Faculty of mechanical engineering, Pune university, Maharashtra, Sandip institute of engineering and management, Nashik.

Abstract:--
The application of a multilayer perceptron (MLP) for calculating the resonance frequencies of a monopole microstrip four-tooth-shaped antenna (direct problem) and for solving the problem of synthesizing a four-tooth-shaped antenna for specified frequencies (inverse problem) is considered. For MLP training, an error back propagation algorithm is used. Various MLP architectures are considered. The MLP prediction errors for different antenna frequencies are estimated. Graphs of the network error dependences as a function of the number of neurons in the hidden layers are presented. An MLP architecture with two hidden layers of 35 neurons in each of them is proposed, as an architecture that gives sufficient accuracy. It is concluded that the parameters are more accurately determined using by MLP with a given architecture compared to regression models.

Index Terms
Four-tooth-shaped antenna, microstrip antenna, neural networks, resonance frequencies

Automated Solar Panel Cleaner

Anil Dube, Prof and HOD, Dept of Mechanical Engg. SIEM, Nashik
Mansi Deshpande, Research Scholar, Department of Mechanical Engg, SIEM, Nashik
Sarthak Patil, Research Scholar, Department of Mechanical Engg, SIEM, Nashik
Kunal Bhandure, Research Scholar, Department of Mechanical Engg, SIEM, Nashik
Kunal Gaikhye, Research Scholar, Department of Mechanical Engg, SIEM, Nashik

Abstract:--

The solar panel is used to produce electricity by using the solar energy. In case of more light that impact on a panel, the result more power will be generate. Due to the upwards angle of solar panels, they are more liable to a build up the dust and bird dropping. The dirt which is not clean with just water or wiper brush. This is reducing the same amount of light impact on the panel and reducing panel output. The solar panel manufacturers and installers are claimed about the projected energy figures that based on the optimum performance of clean solar panel. Due to build up the dirt on solar panel, that can adversely affect the panel's ability to meet that projected figures. So it is necessary and important to clean the solar panel in order to protect and get more power output. So we are design and develop the automatic machine which is cleaning & cooling the solar panel and improve the panel efficiency. This project presents a solution focused on increasing efficiency of photovoltaic module by reducing losses due to warming photovoltaic cells.

Index Terms

PV solar panel, cleaning, cooling, efficiency improvement.

Design & Performance Evaluation of Eco-Cooler by Varying Different Parameters

Anil Dube, Assistant Prof.Mechanical Engg. Dept. Sandip Institute of Engg.And Management, Nashik
Ketan Pitrubhakta, Research Scholars, Department of Mechanical Engg, SIEM, Nashik
Omkar Kulkarni, Research Scholars, Department of Mechanical Engg, SIEM, Nashik
Vishwajit Patil, Research Scholars, Department of Mechanical Engg, SIEM, Nashik
Mayank Gajbhiye, Research Scholars, Department of Mechanical Engg, SIEM, Nashik

Abstract:--

In summer we all complain about the heat. But not everybody having air conditioner appliances because of their cost and also not everybody can afford them, especially in a rural area. In rural areas, there is also a problem with electricity even in urban areas 24x7 electricity is not provided, especially in summer. Eco cooler is an attempt to provide low-cost air conditioning built by waste material. It built from empty plastic bottles cut at some length and mounted into a grid through bottleneck sized holes. The grid is situated over a window with the narrow top end of the bottle facing inwards. When the wind blows through the bottles, the air gets compressed in the bottle and expands, making it cool. Nearly 300 million people in India live without access to electrical power. This Eco-cooler can be a solution for these peoples. Zero Electricity Air Conditioning is an attempt to give minimal effort ventilating impact and is worked from a common waste thing: waste plastic bottles. To make this cooling system, plastic bottles are sliced down at some length and then mounted into a lattice through Bottleneck sized Holes. The setup can be arranged over a window with the smaller best end of the jug confronting inwards. This technique may decrease the temperature by approximate up to 50C.

Index Terms

Eco Cooler, Zero Electricity Air Conditioning, Eco-Friendly Cooling Solution

ILD image processing using Fuzzy Approach algorithm

Anni U. Gupta, Research scholar, E&TC, UIT, RGPV, Bhopal, India
Dr. Sarita Singh Bhadauria, Professor, SOIT, RGPV, Bhopal, India

Abstract:--

Advanced Digital image processing plays significant role in medical image analysis. The various illnesses including interstitial lung diseases (ILD) diagnosis are done with the help of automated tissues characterization. Presently a day's the high resolution computer tomography (HRCT) gives more resolution. Numerous algorithms and approaches for preprocessing and segmentation were studied for numerous ailment diagnostics. The first two stages i.e. preprocessing and segmentation of detection the ILD utilize for further feature extraction and classification. This paper focuses on various preprocessing techniques and enhancement techniques like Adjust intensity values, Histogram equalization, CLAHE on ILD images with different patterns. The performance is evaluated by using image quality measurements. After filtering as well as enhancement an ILD images are segmented with 3-class fuzzy c-means clustering (FCM) and compared with Otsu's technique segmentation results.

Keywords

FCM, HRCT, Interstitial lung diseases, image quality metrics, Preprocessing

Experimental and Optimization of Parameters on Laser Beam Machining to Minimize Kerf, Surface Roughness and Dross of SS304

Umeshkumar Hiralal Chavan, Research Scholar, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik
Prof. Chetan Choudhary, Professor, Department of Mechanical Engineering, School of Engineering and Technology, Sandip University, Nashik

Abstract:--

In traditional machining on laser beam machine, the kerf taper is large and surface roughness is not uniform and optimum due to this the quality of workpiece may get affected, which hampered assembly of finished components. Here we defines there occurs a change in mathematical values of kerf taper, Kerf width and surface roughness, while conducting experimentation of CO_2 laser cutting on SS-304 Stainless steel using Nitrogen as assistance gas. To determine the laser cutting parameter values so as to maximize the material removal rate while simultaneously considering practical process constraints related to dross formation, The laser kerf width and cut edges quality was influenced by the process parameters like cutting speed (*V*), Assist gas pressure (*p*) and laser power (*P*). The experiment was constructed and followed on the base of orthogonal array. A predictive model is generated by using response surface methodology through ANOVA and implemented to find relative influence of process parameters on kerf geometry and surface roughness.

Key words:

CO2 Laser cutting, Kerf Geometry, Laser cutting parameters and Dross

Suspension Based Power Generation for Electric Vehicle Range Improvement

Dattu B. Jagdale, BE, Department Of Mechanical Engineering, SND COE & RC, Yeola, Maharashtra, India
P.S. Baravkar, Phd Research Scholar, Sandip University Nashik, Ass.Prof, Department Of Mechanical Engineering, SND COE & RC, Yeola, Maharashtra, India
Yogesh K. Chavan, BE, Department Of Mechanical Engineering, SND COE & RC, Yeola, Maharashtra, India
Akash R. Gaikwad, BE, Department Of Mechanical Engineering, SND COE & RC, Yeola, Maharashtra, India
Vikas B. Gaikwad, BE, Department Of Mechanical Engineering, SND COE & RC, Yeola, Maharashtra, India

Abstract:--

Energy absorbed by shock absorber is dissipated in terms of heat. Thus in this work attempts have been made to convert dissipated energy in to electrical energy. In this project, design of regenerative suspension system is proposed, for improving the energy harvesting efficiency. Mechanical motion rectifier is used to convert oscillatory vibration into unidirectional rotation of generator. Modal and Vibration analysis is carried out of rack and pinion system to identify displacement and stresses by using software, at various loads. Mode shapes are determined for each natural frequency. Mechanical rack and pinion system is used to generate power through regenerative shock absorber. This system can be used effectively in vehicles for power generation.

Index Terms

Capacitor Charge Recovery Bank, EV, Linear Generator, NF, Regenerative suspension.

Failure Analysis of Automotive Radiator Plastic Tank

Dipak Bhimraoji Khule, Sawitribai Phule Pune University

Abstract:--

The Engine cooling system in the automobile, is used to control the temperature of the engine, the components and the media involved to an optimum level. In order to protect the engine from overheating and being destroyed, it is necessary to ensure that sufficient heat is transferred from the engine to the atmosphere. This study is focused on Radiator which is part of Engine cooling system. The Radiator tank was getting failed for internal pressure cycle test. This paper will show the correlation between test and FEA results and also providing solution to avoid failure. This paper will also focus the parameters which could affect the life of radiator tank. The FEA will be performed using the conventional FEA tools. The validation results will also be included to full proof the results..

Optimization of Process Parameters in Turning Operations and Use of R.S.M. for Design of Experiments

Dr. N. L. Bhirud, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Akash Salave, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Mahendra Wavhal, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Shubham Yadav, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Chhaya Maval, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra

Abstract:--

Energy conservation and emission reduction is an essential consideration in sustainable Manufacturing. However, the traditional optimization of cutting parameters mostly focuses on machining cost, surface quality, and cutting force, ignoring the influence of cutting parameters on energy consumption in cutting process. This experimentation presents a multi-objective optimization method of cutting parameters based on response surface methodology (RSM), which is applied to turn AISI 304 austenitic stainless steel in order to improve cutting quality, energy efficiency, Power Factor while reducing energy consumption. The objectives is to establish the correlation between rake angle, depth of cut, Cutting speed and feed, the power required to the machining operation and the surface roughness of the work piece. Due to pandemic situation of covid and lockdown restrictions, we were unable to complete the further research. The following data is useful and can be use for completing this research in future.

Index Terms

AISI 304, Turning, Energy Consumption, Energy Efficiency, Power Factor, Surface Roughness, MRR, Design Of Experiments, Response Surface Methodology.

The Benchmarking Performance Evaluation with the Cross-Shift Functional Unit

Dr.M.D.Nikose, Associate Professor, Sandip University Nashik
Prof.Y.R.Risodkar, Assistant Professor, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India.

Abstract:--

Mobility in 6LoWPAN is one of the most important technologies in wireless sensor networks for practical applications such as healthcare, vehicle communication systems and logistics applications, in which the sensor nodes recognize the data and transmit it to a monitoring server. Is working on IPv6 mobility management schemes in 6LoWPAN, including a cross-layer design approach. Our solution uses real-time link layer triggers which are used to precisely execute the process of bicasting, transferring and predictive handover on layer 3 (binding updates). The use of real-time triggers helps this solution to avoid packet loss in flight due to packet loss shortly thereafter, avoiding the mobile node losing connectivity (Link is Down (LD) from the previous connection point (Previous Mobile Access Gateway (PMAG)). These triggers are also used to reduce the transmission delay by rerouting the packet flow destined for the mobile node from the local mobility anchor (LMA) to the candidate endpoint (Next Mobile Access Gateway (NMAG)) in advance by performing a layer 3 handover (updating the proxy - Binding and proxy binding detection) proactively triggers layer 2 handover (scanning, authentication and reunion n) by forcing the mobile node to disconnect from the connection point as soon as the signal strength drops below the t-threshold in order to succeed This enables the mobile node to get to the next connection point as quickly as possible, e.g. u scan and reassign. Our solution uses the identified signal strength thresholds (limit values), lower value or 1; the Downlink Event Generation (LGD) is deactivated. The higher the threshold, the earlier the

The Benchmarking Performance Evaluation with the Cross-Shift Functional Unit

Dr.M.D.Nikose, Associate Professor, Sandip University Nashik
Prof.Y.R.Risodkar, Assistant Professor, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India

Abstract:--

Mobility in 6LoWPAN is one of the most important technologies in wireless sensor networks for practical applications such as healthcare, vehicle communication systems and logistics applications, in which the sensor nodes recognize the data and transmit it to a monitoring server. Is working on IPv6 mobility management schemes in 6LoWPAN, including a cross-layer design approach. Our solution uses real-time link layer triggers which are used to precisely execute the process of bicasting, transferring and predictive handover on layer 3 (binding updates). The use of real-time triggers helps this solution to avoid packet loss in flight due to packet loss shortly thereafter, avoiding the mobile node losing connectivity (Link is Down (LD) from the previous connection point (Previous Mobile Access Gateway (PMAG)). These triggers are also used to reduce the transmission delay by rerouting the packet flow destined for the mobile node from the local mobility anchor (LMA) to the candidate endpoint (Next Mobile Access Gateway (NMAG)) in advance by performing a layer 3 handover (updating the proxy - Binding and proxy binding detection) proactively triggers layer 2 handover (scanning, authentication and reunion n) by forcing the mobile node to disconnect from the connection point as soon as the signal strength drops below the t-threshold in order to succeed This enables the mobile node to get to the next connection point as quickly as possible, e.g. u scan and reassign. Our solution uses the identified signal strength thresholds (limit values), lower value or 1; the Downlink Event Generation (LGD) is deactivated. The higher the threshold, the earlier the

A Review on Applications of Nanofluids Integrated To Enhance Heat Transfer Efficiency in High-Performance Systems

Harshada Y. Kolekar, Department of Mechanical Engineering, VIshwakarma Institute of information Technology, Pune, India
Satish Chinchanikar, Department of Mechanical Engineering, VIshwakarma Institute of information Technology, Pune, India

Abstract:--

Researchers have attempted to enhance the heat transfer efficiency using the addition of extended surfaces, application of vibration to the heat transfer surfaces, and usage of the microchannels. However, these approaches lead to larger and bulky thermal systems. Presently, high-performance heat transfer equipment with minimum surface area is a vital requirement in the industry. Moreover, to have optimum energy conversion, the design of the system must provide high efficiency at a low cost. The recent advanced technology has shown the possibility to enhance heat transfer by increasing the thermal conductivity of working fluid. The new generation of heat transfer fluid that exhibits higher thermal conductivity is known as nanofluid. This review discusses the important applications of nanofluids integrated to enhance heat transfer efficiency. Specific applications of nanofluids in engine cooling, solar water heating, nuclear cooling, refrigeration, and enhancement of heat exchange have been discussed to investigate the possibility of its use in heat transfer applications and identify the scope for further development.

Index Terms

Efficiency, Heat Transfer, Nanfluids, Nanoparticles, Thermal conductivity

Solution of 2 dimensional steady and unsteady heat conduction equations by using Finite Difference method

Kiran D. More, Assistant Professor, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Amey A. Deshmukh, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Bhavesh S. Desale, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Akshay S. Kale, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Harshal K. Chaudhari, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India

Abstract:--

Conduction is mode of heat transfer in which there is a transfer of heat energy from high energetic particle to low energetic particle. Computational fluid dynamics (CFD) is a tool which is used to solve any problem numerically, which involves fluid flow and heat transfer. In the current work, 2 dimensional steady and unsteady heat conduction equations are solved by CFD. Governing equation is discretized using finite difference method (FDM). Resulting discretized equations got by FDM are solved by applying suitable boundary conditions and initial conditions by using suitable software. Jacobi method, Gauss-Seidel method and successive-over relaxation method is used for solution. Again for unsteady heat conduction equation solution, both explicit and implicit approaches are used. It is found that, unsteady heat conduction solution is taking more time to get converged solution as compared to steady solution because unsteady heat conduction solution involves more computation compared to steady state. Also in unsteady heat solution, implicit approach is takes more time to get converged solution compared to explicit approach. Solution achieved numerically using CFD is compared with theoretical problem for validation.

Index Terms

Heat conduction, Computational Fluid Dynamics (CFD), Finite difference method (FDM), explicit method, implicit method, heat conduction equation.

Design and Fabrication of Foldable Electric Bicycle

Prof. Ankit. K. Mishra, Assistant Professor, Department of Mechanical Engineering Sandip Institute Of Engineering And Management Nashik Maharashtra
Rutik. S. Hyalinge, Under Graduate Students, Mechanical Engineering Department, Sandip Institute Of Engineering And Management , Nashik, Maharashtra
Aniket. S. Kadam, Under Graduate Students, Mechanical Engineering Department, Sandip Institute Of Engineering And Management , Nashik, Maharashtra
Amol.S. Ghuge, Under Graduate Students, Mechanical Engineering Department, Sandip Institute Of Engineering And Management , Nashik, Maharashtra
Divya. B. Kharat, Under Graduate Students, Mechanical Engineering Department, Sandip Institute Of Engineering And Management , Nashik, Maharashtra

Abstract:--

A bicycle, also called a cycle is a human-powered, pedal-driven, single-track vehicle, having two wheels attached to a frame, one behind the other. E-foldable Bicycle is basically an environmentally friendly and economical mode of personal transportation powered by human force as well as electric power, and the use of bicycles as a mode of transportation is the most promising step toward developing green transportation. A high-priority requirement for urban bicycles is not only their riding performance but their availability in compact sizes, which can be achieved by incorporating a feature in their design that facilitates them to be folded into portable sizes. And also due to its main feature of electric drive it has ability to travel at a controllable speed of 15- 20kmph to a great distance of nearly 10 km [Approx.] which is beneficial for those people which are not regularly drive the bicycle. Folding mechanism vary, with each offering a distinct combination of folding speed, folding ease, compactness, ride, weight, durability and price. Here basically we are using a hinged type mechanism which have to lock manually. And to make the bicycle of high strength and durability we are going to use hollow shafts of mild steel having to construct a bicycle frame. E-Foldable Cycle is not only beneficial for environment but is also very human friendly, and to drive it by electric power here we use a D.C motor of 24V which is run with the help of two 12 volts maintenance free battery

Key Words:

Mild steel, D.C motor, Battery, Bicycle, Folding mechanism

Comparative Analysis of Image Enhancement Approaches for Infants Brain MR Images

Vinodkumar Ramesh Patil, Research Scholar, R.C.Patel Institute of Technology, Shirpur
Tushar H. Jaware, Assistant Professor, R.C.Patel Institute of Technology, Shirpur
Dipak P. Patil, Principal, Sandip Institute of Engineering & Management (SIEM), Nasik

Abstract:--

Presently, the diagnostic medical technique Magnetic Resonance Imaging (MRI) plays a crucial role in creating high-quality images of the infant's brain. MRI is frequently employed in the treatment of brain, foot, prostate, and ankle. Noises such as Gaussian noise, salt and pepper noise, and speckle noise are typical introduce in Magnetic Resonance Imaging (MRI) images. Denoising MRI images is critical for improving image quality and the effectiveness of quantitative analysis of diagnostic and treatment analysis. In this article, various denoising techniques such as Total Variation, Non-Local Means, Anisotropic Diffusion, Bilateral Filtering, Wavelet Based and Shift-Invariant Wavelet are studied to remove noise in infants MR images. Analysed using benchmarks such as MSE, RMSE, EGRAS, REF and etc. This comparative study shows that surpasses the currently available denoising filtering.

Index Terms

Image De-noising, MRI, Parameter, MSE.

Vibration Analysis and Topographical Optimization of Automotive Sheet Specimen

Mrutyunjaya G Hiremath, Savitribai Phule Pune University

Abstract:--

The automotive industries have undergone a massive change in the last few decades. Nowadays, automotive industries and OEM manufacturers implement various innovative ideas to ensure the desired comfort while minimizing the cost, weight, and manufacturing time. One way to reduce weight, and therefore cost, of a sheet metal component is reducing its thickness. However, in doing so the component's strength and stiffness is usually negatively affected. There are a few techniques that circumvent this issue by deforming the sheet metal by for example, stretching, folding or stamping the component into strengthening and/or stiffening geometries. Using beads on flat surfaces of a sheet metal plate will increase its stiffness. The placement and the geometry of the beads will determine the stiffness gained. The placement is usually done by utilizing past experience and therefore lacks optimization. In this project work we are taking area of one square foot metal sheet which used in bus base structure. 3 D model of metal sheet will be drawn with the help of CATIA software. Modal vibration tests are conducted to investigate their vibration damping responses

- Topography optimization is a special class of shape optimization, which can be used to change shapes of shell structures by introducing stamped beads for a better structural performance
- Using beads on flat surfaces of a sheet metal plate will increase its stiffness. The placement and the geometry of the beads will determine the stiffness gained
- The placement of beads is usually done by utilizing past experience and therefore lacks optimization.
- In this project work we are taking area of one square foot metal sheet which used in car/bus base structure (skid plate)
- A skid plate is an abrasion-resistant material affixed to the underside of a vehicle or boat to prevent damage to the underside when contact is made with the ground
- Skid plates may be used on off-road vehicles, motorcycles and lowered vehicles to prevent damage to the underside even Fake skid plates are also added to vehicles for an off-road look
- Steel skid plate for the protection of the engine and the gearbox
- It is necessary to perform a joint theoretical, analytical (FEA) and experimental approach for validation
- 3 D model of metal sheet will be drawn with the help of CATIA software
- FEA (ANSYS) to perform on the 3D model
- Modal vibration tests are conducted to investigate their vibration damping responses

Fully Automated Vegetable Cleaner Using Ozone Disinfectant

Dr. N. L. Bhirud, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India
T. M. Ahire, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India
A. D. Mandge, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India
G. J. Deore, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India
M. V. Dhangar, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India

Abstract:--

Ozone, a form of oxygen commonly associated either with its ability to guard against the sun's harmful ultraviolet radiation or with smog, recently gained approval for use in the U.S. food processing industry to help rid food of dangerous pathogens (bacteria, parasites, fungi, and viruses). Ozone is a universal disinfectant that can oxidize organic matter and inorganic compounds, destroy viruses, bacteria and other pathogens. For over a century, ozone has been used in water treatment processes and only recently it has started to play a major role in the food and agriculture industry. Increased demand from consumers and current regulations have led to an exhaustive overhaul of the types of disinfectants used in the washing processes for fruit and vegetables. The use of ozone for washing salads and vegetables produces water with a high degree of purity that is unattainable with other methods. Its disinfection power and the total absence of chemical products in the end-product make this system the ideal choice for this type of process. With 4 ppm of residual ozone in the wash water, a reduction of 99.99% in terms of surface contamination can be obtained. These results are equal or better than those obtained using 50 ppm of chlorine. Another advantage is that after washing, the water used is not contaminated and there are no alternations in the product's color, quality or texture. Sometimes, the average product life is even prolonged through this process. The more we research and learn about ozone, the more impressive Ozone's resume becomes. The number of applications completely dominated by Ozone is staggering. Ozone kills most bacteria within 15 seconds. After 20 seconds Ozone destroyed all E-coli. Chlorine's efficiency is quite poor compared to ozone. The paper is aimed to highlight the latest work in this field.

Index Terms

Vegetable Cleaner, Ozone Disinfectant, Fully Automated.

Manually Operated Fertilizer Spreader

Jaggi S.S, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik
P. S. Baravkar, Phd Research Scholar, Sandip University Nashik, India
Kangane P.R, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik
Jagtap G.S, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik

Abstract:--

A method was generated to spread the fertilizer uniformly over a fallow land by dropping the fertilizer over the impeller disc. The system consists of a three wheels, two at the front and one at the back. These two wheels at the front are used to impel the fertilizer. The two hoppers are used to store the fertilizer; these hoppers are placed at some height from the wheel axle so that the fertilizer falls on to the impeller. The hopper is provided with flow control mechanism. In fertilization, the flow maintenance is necessary. Generally every crop should get sufficient amount of fertilizer. This condition is satisfied by Spring Mechanism. In normal conditions spring is not in tension and hopper is closed. As operator apply tension on the spring, controlling plate moves backward and hopper is open. Below this system there is an impeller. It is mounted on output shaft. Hooper opens on Impeller eccentrically and due to centrifugal action fertilizer spreads in the farm. This high value of centrifugal force is generated by the help of proper gear reduction ratio. The gears are coupled to the shaft of wheel.

With this machine, percentage reduction in time required for Fertilization was observed to be 50% and reduction in labor cost as compared to conventional method was 80%. It has solved the problem of traditional way of Fertilization.

Keywords

Fertilizer spreader, Flow control mechanism, centrifugal force, labor cost and fertilization time

Design and Analysis of Compact Shredder Machine used for Recycling of Face Masks and Medical Additives

Piyush Jagdale, School of Mechanical & Civil Engineering, MIT Academy of Engineering, Alandi, Pune, India
Tushar Patil, School of Mechanical & Civil Engineering, MIT Academy of Engineering, Alandi, Pune, India
Himani Chopade, School of Mechanical & Civil Engineering, MIT Academy of Engineering, Alandi, Pune, India
Ekta Bhalme, School of Mechanical & Civil Engineering, MIT Academy of Engineering, Alandi, Pune, India
Rutuja Deore, School of Mechanical & Civil Engineering, MIT Academy of Engineering, Alandi, Pune, India

Abstract:--

One of the social measures applied during the COVID-19 pandemic has been the use of face masks and gloves. The information campaigns focusing on new methods of waste collection have been difficult to introduce on a large scale, and citizens need better information regarding how to handle and dispose of this waste This paper presents the design analysis of compact shredder machine which can be used in. Fabric shredding machine had played considerable role in the waste recycling process towards solving the problem associated with fabric waste and the harvesting of the much energy that the waste fabric could provide for human need. The objective of this machine is to get rid of these used masks and gloves with the help of designing software's like CATIA V5 we have designed the shredder machine and analyzed the components using ANSYS 2021 In this analysis we found out that results from ANSYS are closely matches with analytical method. It is accepted by as per standard. So, our attempt is to design and analyses a Shredder Machine with maximum optimization of the available resources at minimum cost.

Keywords:

Shredder machine, shred, face mask, waste.

Harmonic Rejection in Rectangular Microstrip Patch Antenna using Defected Ground Structure

Pravin Bhole, R C Patel Institute of Technology, Shirpur

Abstract:--

This paper presents, a microstrip patch antenna using the defected ground structure (DGS) to suppress higher order harmonics. The performance of microstrip patch antenna may affect due to the presence of higher order harmonics, which also reduces efficiency. These higher order harmonics causes spurious radiation and create problem of electromagnetic interference. The proposed antenna is simulated on FR-4 substrate with dielectric constant of 2.2 and fed with 50 ohms microstrip line using High Frequency Structure Simulator (HFSS) software. By introducing the defect in the ground plane and changing its shape and position the corresponding changes in the harmonic rejection characteristics have been noted. In comparison with conventional microstrip patch antenna, the radiated power of microstrip antenna with DGS decreases at harmonic frequencies.

Solution of 2 Dimensional Steady and Unsteady Heat Conduction Equations by Using Finite Difference Method

Kiran D. More, Assistant Professor, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Amey A. Deshmukh, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Bhavesh S. Desale, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Akshay S. Kale, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India
Harshal K. Chaudhari, UG students, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India

Abstract:--

Conduction is mode of heat transfer in which there is a transfer of heat energy from high energetic particle to low energetic particle. Computational fluid dynamics (CFD) is a tool which is used to solve any problem numerically, which involves fluid flow and heat transfer. In the current work, 2 dimensional steady and unsteady heat conduction equations are solved by CFD. Governing equation is discretized using finite difference method (FDM). Resulting discretized equations got by FDM are solved by applying suitable boundary conditions and initial conditions by using suitable software. Jacobi method, Gauss-Seidel method and successive-over relaxation method is used for solution. Again for unsteady heat conduction equation solution, both explicit and implicit approaches are used. It is found that, unsteady heat conduction solution is taking more time to get converged solution as compared to steady solution because unsteady heat conduction solution involves more computation compared to steady state. Also in unsteady heat solution, implicit approach is takes more time to get converged solution compared to explicit approach. Solution achieved numerically using CFD is compared with theoretical problem for validation.

Key words:

Heat conduction, Computational Fluid Dynamics (CFD), Finite difference method (FDM), explicit method, implicit method, heat conduction equation.

Four Wheel Steering System Zero Radius Turning Vehicle

L. K. Toke, Associate Professor, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Prashant M.Gaikwad, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Yash P.Chaudhary, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Roshan T. Pavase, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Rahul A. Dabhade, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra

Abstract:--

The project is about Four Wheel Steering System Zero Radius Turning Vehicle. This vehicle moves in the all direction. This makes the vehicle suitable for operation in the the narrow paths & sharp corners. The normal wheel vehicles face lot of problem like parking, U turn & much more which consumes more time. So, a Four Wheel Steering System Zero Radius Turning Vehicle is designed to reduce & eliminate problems that occur when h&ling material in the the industries. in the this system, each of the 4 wheels has given drive with stepper motors, so it can rotate 360 degree. There are 4 Dc motors drive to move the vehicle in the forward & reverse directions. 360-degree rotating wheel is controlled by RF remote. Consequently, we can utilize this Four Wheel Steering System Zero Radius Turning Vehicle for various perspectives like to transport things overwhelming bags & furthermore in the vehicles, which will help in the decreasing rush hour gridlock & spare time.

Optimization of Conjunctive use by LINGO & PSO for water resources management in irrigation command of Khatav taluka

Ranjeet Sabale, Ph.D. Scholar, VTU Belagavi, Karnataka-590018, India
Mathew Jose, Scientist-E, NIH Belagavi, Karnataka-590001, Ministry of Jal Shakti, Govt. of India

Abstract:--

This study is focused to optimize the conjunctive use of surface and groundwater to aid the sustainable irrigation in Khatav taluka of Maharashtra state, India. The study area is semi-arid; water stressed, and has average annual rainfall 560 mm. The main objective of this study is to formulate the conjunctive use model to minimize water shortage issues and to yield maximum returns from the agriculture. To achieve the set objective, the methodology used, the LINGO & PSO optimization packages are used. The formulated conjunctive use model is solved by LINGO and validated with Particle Swarm Optimization (PSO). The conjunctive use scenario for various constraints are tested for current and proposed cropping pattern. The outcomes of work shows that conjunctive use technique is feasible and easily applicable to study area, which results in increase in net benefits from agriculture sector. From study it is observed that, sugarcane crop cultivation has to increase to manage the net returns. The results shows that, conjunctive use of surface water (canal water) and groundwater saves the canal water up to 49% in hot season, 27% in Kharif season and 32% for Rabi seasons. The study concludes that to maximize net benefits, the crop cultivation except sugarcane & Onion has to lower down by 12-15%. After optimization overall net return from agriculture sector is seen about 8 % more in any given season.

Index Terms

Conjunctive use, crop yield, irrigation, Khatav, Optimization.

Effect of Electric Spring in Minimizing Voltage Fluctuation in Critical Loads.

Samuel Shrawan Tandekar, Abha Gaikwad Patil College of Engineering, Nagpur

Abstract:--

This project describes the dynamic simulation approach for electric springs which is appropriate for voltage and frequency control .It is a new concept which provide system stability solutions. The use of Electric Spring is a new technology that has been used for the distributed voltage control. As there is a voltage fluctuation problems due to renewable energy sources, it is found to be an effective solution over the voltage fluctuations. To show the effectiveness of electric spring when installed in large number across the system, there is need of developing simple and accurate simulation models for these electric spring, which then can be incorporated in large scale power system simulation studies. Electrical spring addresses the main issues like reactive power management, voltage fluctuations and, power quality we will see Close similarity between the simulation and experimental results and it will give us the confidence to use this electric spring model for investigating the effectiveness of their standard operation when distributed in large number across a power system.

Index Terms

Reactive Power Control, Electric Spring, Critical Load, Voltage Fluctuation, Stability

A Review Paper on Machining of A-B Titanium-Alloy (Ti–6Al-4V) Using PVD & CVD Coated Carbide Insert for Green Machining

Prof.S.B.Ambekar, PhD Scholar, SRK University, Bhopal, Madhya Pradesh, India
Prof. Dr.S.S.Pawar, Professor, SRK University, Bhopal, Madhya Pradesh, India

Abstract:--

As we know that today every manufacturing industry is working on optimum cost for machining process by effective optimization of various process parameters like speed, feed & depth of cut. In this paper we studied the various paper of machinability issues on α-β Titanium alloy (Ti-6Al-4V) by using PVD and CVD coated inserts which is widely used in various fields such as automotive, aerospace and bio-industry, nuclear plant and medical application because of titanium alloy is having a highly specific strength material, excellent mechanical characteristics such high hardness, corrosion resistance, specific strength and bio-compatibility, due to this titanium alloy is very much difficult to machine because its internal mechanical properties like ability of high strength at elevated temperatures, low thermal conductivity high hardness. Moreover, titanium alloys lower thermal conductivity and high specific heat limit the effective removal of heat developed during machining through workpiece and chips. In this paper we worked on literature study of optimization of process parameter of turning operation of machining process for improvement in surface roughness and reduction in tool wear on titanium alloying α-β Titanium alloy (Ti-6Al-4V) material by different methods.

Keywords:

Machining, α-β Titanium alloy Ti-6Al-4V,speed, feed, depth of cut, surface roughness, tool wear, PVD and CVD.

A Real Time Intelligent Application for Facemask detection and Notifying using Deep Learning

Sravya Reddy Pilli, 4th Year B.Tech, Department of IT, V.R. Siddhartha Engineering College, Vijayawada, India.
Laya Sri Kata, 4th Year B.Tech, Department of IT, V.R. Siddhartha Engineering College, Vijayawada, India.
Swapna Challagundla, 4th Year B.Tech, Department of IT, V.R. Siddhartha Engineering College, Vijayawada, India.
Suhasini Sodagudi, Associate Professor of IT, V.R. Siddhartha Engineering College, Vijayawada, India

Abstract:--

An infection named Coronavirus is one among the group of infections that causes disease in creatures and people. Explicitly in people, prior a few infections assaulted that restrained respiratory contaminations are going from the regular virus to more serious sicknesses like the Middle East Respiratory Syndrome (MERS) and severe acute respiratory syndrome (SARS). The most recently originated Coronavirus has caused lots of deaths in and around the globe. This coronavirus disease, COVID-19, is clearly stated to be a dangerous disease if the attacked human has long-lasting diseases like diabetes, heart problems, kidney problems, lung failures, etc. Hence, it is finally concluded as pandemic disease. Ad-hoc, sensor networks, IoT-based, mobile networks became helpful in many critical applications like health checkups, traffic monitoring, disease surveillance, civilian monitoring, environment monitoring, etc. Efficiency has been a significant concern to monitor to introduce certain restrictions like mass gatherings, people movement in public places, less human interaction, etc. Wearing a face mask and social separating are the two improved wellbeing conventions choose by WHO to forestall the spread of the infection. Thus, to inculcate and implement the standard guidelines, the organizations are considered. We propose an efficient computer vision-based FMDN (Face Mask Detection and Notification) approach focused on real-time automated monitoring of people to detect face masks in working environments. The employees are monitored against their regular activity and detect violations captured through web cameras. Current profound learning calculations by utilizing the PyTorch library are utilized to recognize face masks that cover three parts: recognition, following, and approval. In this manner, the proposed framework FMDN favours general public by saving time and helps in bringing down the spread of covid. Thus, the proposed system FMDN favor's society by saving time and helps in lowering the spread of Coronavirus. It may be carried out successfully in current circumstances when lockdown isn't executed to assess in open social events, shopping centers, and so on. This work examines a bunch of video transfers/pictures to recognize people who are consistent with the public authority rule of wearing clinical masks. If a person is detected with no mask, it immediately sends an alert message to the administrator or higher officials, including the Individual to notify of wearing masks.

Keywords

Computer vision, Deep learning, face mask, pandemic, Pytorch, web camera.

Design, Development and Testing of Semi-automatic Dishwasher

A.S.Dube, Professor, Mechanical Engineering, SIEM, Nashik
Sumeet Nathani, BE Mech.Students, SIEM, Nashik
Vaibhav Waghmare, BE Mech.Students, SIEM, Nashik
Amey Pardeshi, BE Mech.Students, SIEM, Nashik
Rahul Khairnar, BE Mech.Students, SIEM, Nashik

Abstract:--

Machine dishwashers are a distinctive consumer appliance since they are often replaced with manual dishwashing. Although some studies indicate machine dishwasher does not use much energy and water than manual dishwashing, their scopes are limited to the use phase. Our study evaluates the design & development of machine for dishwashing. Due to the dishwasher the cleaning and drying dishes becomes much easier and more efficient. This project work has been came up with the difficulty in washing of any type of plates. Our survey report shows that the maximum difficulties occurred in washing dishes manually. The washing power contains the chemical substances which may be harmful to human hand. The suitable device has been developed to overcome the problems encountered during manual dishwashing. From that the dish washing can be easily done without application of any extra force. By using semi-automatic dishwasher, we can not only reduce time but also human efforts significantly. In conventional dish washing process large amount of human power as well as quantity of water is used. So keeping that in mind to reduce this automatic dish washing machine is developed.

Design and analysis of Belt Conveyor Components for weight Reduction and Structural strength Enhancement.

Suraj Bagal, Savitribai Phule Pune University

Abstract:--

One of the main important sectors of industry is material handling, which is consuming a considerable proportion of the total energy. For instance, material handling contributes about 10% of the total maximum demand in various countries. Belt conveyors are being utilized to form the most important parts of material handling systems because of their high efficiency of transportation. It can be used to reduce the energy consumption or energy cost of material handling sector.In existing conveyor components it has been observed that design calculations factor of safety is much greater than requirement and there will be scope for weight reduction. Also it has been seen that particular parameters are there they can reduce the weight of conveyor like rollers, channel, base frame, support bracket etc. So it need to be check by using structural analysis and derived the parameter's like value of deflection, stress, strain which is required for optimized design. In this research 33% weight reduction is achieved by optimized design, by changing the different design parameters. Also strength to weight ratio is increased due to changing in the design of different components of belt conveyor.

Index Terms

Efficiency, material handling, optimization, support bracket etc.

Design and Validation of Gear Pump Using Structural and CFD Simulation

Swapnil Pimpalshende, Savitribai Phule Pune University

Abstract:--

Gear Pump are mostly used in the various applications like fluid power transmission and systems, automotive, agricultural machinery, aerospace etc. External gear pumps are robust, simple in manufacturing and have low cost of production. Various studies are being done to improve the performance of the external gear pump.

In this paper, the main contribution of work is to prepare analysis procedure, which will help in studying the flow rate and pressure condition. The analytical calculations were done considering the flow rate of 25 LPM and 150bar working pressure. 3D model was prepared using these calculation with the help for 3D software. Creo Parametric was used for modelling the gear pump. Later, this CAD model was used for the Computational fluid Dynamics (CFD) analysis. The CFD tool was used to get the flow rate and pressure value and was compared with the analytical solutions. Finite element analysis can be done on Gear pump for checking the strength of shaft, gear tooth and the casing and can be compared with the analytical calculations.

Step-by-Step Designing and Implementation of Ring Oscillator Physical Unclonable Function for Hardware Security

Swati Kulkarni, IEEE Student Member
Dr. Vani R.M, Applied Electronics Department
Dr. P.V. Hunagund, University Science Instrumentation Center, Gulbarga University, Gulbarga-585106 India

Abstract:--

Typically, in the Internet of Things (IoT) yields objects are controlled and monitored remotely over a network. A standard IoT system includes various sensors that combine with microprocessors and other custom peripherals to perform their operations. Data collection and processing, computation, and finally communication these operations are involved to carry out IoT applications. Designer and user both demand these operations should be performed without any kind of unauthorized interference. As per the current trend, the way we have relied on technology, the way data exchange has started, it is not possible to rely on existing data security systems. It has become imperative to add a concrete solution to the existing infrastructure of security. Hardware security is attracted attention of researchers because of its importance in IoT applications, IP securities, and controlling counterfeit electronic devices. Physically Unclonable Functions (PUF) is an innovative approach that provides security primitives and also will resist Integrated Circuit (IC) cloning and counterfeiting. PUF works on the principle of process variations present inside the hardware. PUFs carry capricious and event-specific values and can be used to provide hardware security. Nowadays IoT design has been implemented on the SoC platform. Here we have designed PUF on the SoC platform so that it will be helpful to IoT designs. The presented work will help in understanding the ROPUF design with respect to simulation, synthesis, placement and routing and hardware validation.

Index Terms

Register Transfer Level (RTL), FPGA-SOC, Simulation, Synthesis, Placement & Routing and Hardware Validation etc.

Evaluation of Propagation Depth of Critically Refracted Longitudinal Waves in Materials with Finite Element Simulation

Vikas Dive, Department of Mechanical Engineering, Pimpri Chinchwad College of Engineering, Savitribai Phule Pune University, Sector No. 26, PCNTDA, Nigdi- Pradhikaran, Pune, India
Sanjay Lakade, Department of Mechanical Engineering, Pimpri Chinchwad College of Engineering, Savitribai Phule Pune University, Sector No. 26, PCNTDA, Nigdi- Pradhikaran, Pune, India.

Abstract:--

This research work focuses on comparing the methods used to estimate the propagation displacements of critically refracted longitudinal waves in a material. It is necessary to know the exact depth of the measurement while assessing the residual stress in mechanical components. Critically refracted longitudinal waves are applied in residual stress measurement due to an acoustoelastic effect. In this work, we are simulating LCR wave displacement in the material under test. A finite element model was built using wave propagation equations with fundamental laws of acoustoelastic effect. Different cases with varying depths of slots are prepared on test material. The simulations are performed without and with slots to obtain wave travel information at various depths. The slots created hinderers in the wave path when we made the slot below the limiting value of wave propagation for the specific frequency. Ultrasonic transducers of 1 MHz, 2 MHz, 3 MHz, 4 MHz, 5 MHz, and 10 MHz frequency and 6mm diameter were employed to confirm the simulation and experimental results. The testing and numerical simulation results fluctuate with a 1.35% error. The method adopted in this work can be easily applied to different materials used in industrial applications.

Keywords:

Finite Element Method, Longitudinally Critically Refracted Waves (LCR), Non-Destructive Testing, Numerical simulation, Residual Stress, Ultrasonic Testing.

Location-based Mutual Authentication Scheme for Cardless ATM Transaction

Wilawan Rukpakavong, Associate Professor, Sandip University Nashik
Sirikunya Nilpanich, Assistant Professor, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India
Kannikar Subsomboon, Assistant Professor, Sandip Institute of Engineering and Management, Nashik, Maharashtra, India

Abstract:--

Many financial institutions offer cardless ATMs to improve customers' experience by eliminating the need to carry and replace cards, which can be easily lost or compromised, as well as reduce the cost to the institution to replace them. However, the current cardless ATM withdrawal systems are vulnerable to several attacks. This paper describes the adversarial models for the possible attacks, such as shoulder surfing and relay. Moreover, we propose a location-based mutual authentication scheme which is a modified model to solve those possible problems, while customers still perform the same process and get the same transaction facilities for withdrawal transactions as exists. In addition, this paper analyses and discusses the security of the proposed scheme and the practical issues.

Index Terms

Authentication; Cardless ATM; Mutual Authentication; Location-based Authentication

Sign LanguageRecognition Using Machine Learning

Abhimanyu Umrani, Department of Computer Engineering, MAEERs MIT Polytechnic, Pune
Akshay Kulkarni, Department of Computer Engineering, MAEERs MIT Polytechnic, Pune
Harshal Patil, Department of Computer Engineering, MAEERs MIT Polytechnic, Pune
Vishwaraj Barate, Department of Computer Engineering, MAEERs MIT Polytechnic, Pune
Nita Dongre(Jaybhaye), Department of Computer Engineering, MAEERs MIT Polytechnic, Pune

Abstract:--

A Sign Language is one of the best approach to speak with hard of hearing individuals. In this work sets, included highlights and variety in the language with region have been the major barriers which has led to little research being done in ISL. One ought to learn gesture based communication to cooperate with them. Adapting typically happens in peer gatherings. There are very few study materials accessible for sign learning. Since of this, the way toward learning gesture based communication learning is a very difficult task. The underlying phase of sign learning is Finger spelled sign learning and in addition, are utilized when no relating sign exists or underwriter doesn't know about it. The greater part of the current apparatuses for gesture based communication learning utilize outside sensors which are expensive. Our undertaking targets broadening a stage forward in this field by gathering a dataset and afterward utilize different component extraction methods to remove valuable data which is then info into various supervised learning techniques. Currently, we have detailed four overlay cross approved outcomes for the unique approaches, and the distinction from the past work done can be ascribed to the way that in our four crease I cross approval, the approval set Correspond to pictures of a person not quite the same as the people in the preparation set.

Review of Gear Testers

Abhishek D. Bhesar, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Niraj R. Bendale, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Chetan D. Bachhav, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Pankaj S. Bargaje, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Prof. Dr. Gajanan N. Shelke, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik

Abstract:--

Constant change is observed in manufacturing sector in accordance with the trouble of passing on new arrangement into reality. New machines and the frameworks are being made constantly to makes diverse thing at less costly rates and with high precision. Automation is the creation and application of technologies to produce and deliver goods and services with minimal human intervention. The implementation of automation technologies, techniques and processes improve the efficiency, reliability, and speed of many tasks that were previously performed by humans. New machines and the framework are being made constantly to makes diverse things less costly rates and with high precision. Gear is the most important element in the power transmission method. The gear profile is very important factor of gear application at different area like automobiles, machine tools and other area power transmission. Hence the gear shape and accuracy is very important. The customer requirements for higher power density and lower noise demands more accurate gears. By the time, there were various gear testers has introduced in the field of gear testing till now. In this paper, we will see the work done by various researchers and the evolution that we got to see in gear measuring equipments in the previous years.

Comparative Study on Performance Analysis on Brain Cancer MRI using Image Thresholding Techniques

Akshita.S.Chanchlani, Department Computer Science and Engineering, PhD Research Scholar, SGBA University, Amravati, India
Dr.Vilas.M.Thakare, Departments of CSE, Head of Department,SGBA University,Amravati,India
Dr.Vijay.M. Wadhai, Departments of E&TC,Principal,DYPATIL College of Engineering, Akrudi,Pune,India

Abstract:--

Image preprocessing of brain cancer Magnetic Resonance Imaging (MRI) and its analysis is act of examining images for identifying objects and analyzing their significance. In medical image processing early detection and analysis of brain cancer is most difficult and time consuming task. Medical image processing is most important and challenging field now a days. Image processing techniques are used for improving early detection and treatment stages, especially in various cancers. Image segmentation is the process of partitioning the image into multiple segments for locating objects and boundaries in image. Image thresholding is one of the techniques for image segmentation to binarize the image based on pixel intensities as it partitions the image into two groups of pixels. In this proposed work various methods of image thresholding has been implemented. This paper focuses on implementation of three techniques simple thresholding, adaptive thresholding and Otsu's thresholding specifically on brain cancer MRI image. The implementation work is done by using python openCV library. To check the performance of each image thresholding technique, black pixel and white pixel ratio has been calculated.

Index Terms

Brain Cancer Magnetic Resonance Imaging (MRI), Image PreProcessing, Image Segmentation ,Image Thresholding

Answer Evaluation system for different domains

Alok Kumar, Dept. of Computer Science & Engineering, CSJM University Kanpur
Aditi Kharadi, Dept. of Computer Science & Engineering, CSJM University Kanpur
Deepika Singh, Dept. of Computer Science & Engineering, CSJM University Kanpur
Mala Kumari, Dept. of Computer Science & Engineering, CSJM University Kanpur

Abstract:--

Automated text scoring (ATS) or subjective-answer evaluation is one of the big hurdles in the technical advancement of academics. Reading each answer meticulously and scoring them impartially becomes a monotonous task for many in the teaching profession, especially if the answers are long. Another big challenge is comprehending the student's handwriting. Marking criteria may also vary largely with domain, for instance, credit is given to usage of correct grammar in some cases, while other domains may require certain keywords to be present in student's answers. In this paper, we have tried to approach this problem with three perspectives- two standard linguistic approaches and a deep learning approach. The first approach employs the presence of certain keywords as a marking criteria and also includes a handwriting recognizer that can extract text from scanned images of the handwritten answers. The second approach uses similarity between an understudy and a benchmark answer. This paper also proposes the use of a sequential model, which is trained on the Automated Student Assessment Prize - Automated Essay Scoring (ASAP-AES) dataset for evaluating long answers.

Keywords

Natural Language Processing (NLP), cosine similarity, jaccard similarity, synonym similarity, bigram similarity, sequential model, LSTM, Root Mean Squared Error (RMSE)

A review study of Nano refrigerant based vapour compression refrigeration system (R134a+Al_2O_3)

Ankit Kumar, Asst. Prof., Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik
Dipak Maher, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik
Mahesh Mankar, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik
Adil Sayyad, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik
Mahesh Chaudhari, UG Students, Dept. of Mech. Engg., Sandip Institute of Engineering and Management, Nashik

Abstract:--

In today's world refrigeration systems play a significant role to meet the human desires and never-ending analysis is being dole out by several researchers so as to boost the performance of those systems. Here, an endeavor has been created to boost the performance of the system. Our, gift study on experimental investigations into the performance of nano refrigerant (R134a + Al2O3) based mostly cooling. it absolutely was ascertained that there's additional temperature drop across the condenser for the nano refrigerant (12.37% — 10.88%) compared to refrigerant R134a. Similarly, a gain of five.52% and 9.24% was obtained for evaporator temperature. Associate in Nursing improvement in COP was additionally ascertained throughout the investigations (1.17% — 9.14%). This was achieved underneath 25–26 oC evaporator temperature load. The results indicate that constant of performance will increase with the usage of nano Al2O3. so mistreatment Al2O3 nano refrigerant in cooling is found to be possible.

Index Terms

Aluminium Oxide Nano particles, Silicon Oxide Nanoparticles, Nano refrigerant, Thermal Conductivity, a cop, Energy Consumption

Dark Pattern Use in E-Commerce

Aryan Grover, Vellore Institute of Technology, Vellore
Shivansh Gupta, Jaypee institute of information technology, Noida
Prachi Garg, Department of Operations Research,Delhi

Abstract:--

Growing e-commerce competition has driven businesses to develop several tactics to engage and lead consumers through digital buying experience. Some merchants utilize digital nudges to help consumers through buying. Some websites employ dark patterns. A user interface element that manipulates the user to make a choice the user might not have chosen if they were free to pick. The report characterizes the dark pattern as "intentional and deceptive design decisions meant to attain the psychological benefit of forcing users to make unanticipated and unpleasant choices; they produce value for the services for which they function." Four variables appear to explain dark patterns' effectiveness: technological, cognitive, social, and motivational. These aspects are described in depth. E-commerce generally uses dark pattern . The emergence of dark patterns led to industrial activity that led to much greater usage of dark patterns. Dark patterns were also used to enhance client interaction, resulting in increased financial success. With limited timeframes and small resources, designers concentrated on developing a "happy path" that lets them to focus on reaching shareholder goals without addressing the user experience as a whole. Finally, some scholars claim that most dark patterns are attributable to lack of ethical planning training. This literature review tries to illuminate dark patterns and the reasons behind their utilization in ecommerce. It also explains why e-commerce firms shouldn't employ dark patterns on their site and provide ideas for further research.

Index Terms

dark patterns, e-commerce, digital nudges

The Significance of the Application of Hci Concepts and Methods in Analysis, Design, and Evaluation of Interactive Technologies

Aryan Grover, Vellore Institute of Technology, Vellore
Shivansh Gupta, Jaypee institute of information technology, Noida
Prachi Garg, Department of Operations Research,Delhi

Abstract:--

Humans interact with computers in a variety of ways, and the interface between them and the machines they use is critical to making this connection possible. Today's graphical user interfaces (GUIs) are found in desktop programs, web browsers, mobile computers, and computer kiosks. Speech recognition and synthesizing systems employ voice user interfaces (VUI) and evolving multi-modal and gestalt User Interfaces (GUI) let people to interact with embodied character agents in ways that traditional interface paradigms cannot. The area of human-computer interaction has grown in terms of interaction quality and branching over its history. Instead of building standard interfaces, many research areas have focused on topics such as multimodality against unimodality, intelligent adaptive interfaces against command/action-based interfaces, and lastly active vs passive interfaces. The study examines the value of incorporating HCI ideas and approaches into the analysis, design, and assessment of interactive technology. The study incorporates the most up to date HCI principles, and it addresses research gaps identified in prior studies by different authors. The systematic study of human computer interaction has arguably been the most significant factor driving the exponential increase in technology acceptance, diffusion, and utilization, over the past two decades, as well as the technology driven productivity gains that have benefited a full spectrum of organizations.

Modification in Mini CNC Machine Using Arduino

Atharv Ambavale, Student
Shantanu Patil, Student
Sushant Ingawale, Student
Pranit Magdum, Student

Abstract:--

This paper is about the use of Arduino microcontroller for implementation of CNC plotter machine. When learning through the various websites, this CNC plotter is made-up by Arduino microcontroller, two stepper motor, one servomotor, and free ASCII text file package like Inkscape and process package. The Inkscape package is employed to get the G code file for the given drawing and therefore the process package is employed for feeding generated G CODE files and feed into the Arduino controller that controls the output devices to provide the given drawing. This machine attracts the given sketch quicker and additional correct than the individual. This machine will draw the images of letters, text, cartoons and shapes.

The aim of this work is to cut back value and quality of CNC machine. For this the mechanical setup is formed in wood. The planning and development of CNC comprise with the Arduino as a result of the central part in dominant the motion in X, Y and Z (Three axis) direction of the CNC machine.

Index Terms

Arduino, CNC, G-codes, Inkscape.

Desktop Assistant

Suryansh Rastogi, School of Computer science and engineering, Galgotias University, Greater Noida, Uttar Pradesh, India
Tushar Bhatt, School of Computer science and engineering, Galgotias University, Greater Noida, Uttar Pradesh, India
Devbrat Singh, School of Computer science and engineering, Galgotias University, Greater Noida, Uttar Pradesh, India

Abstract:--

our default ai voice is a smart personal assistant a human language interface computerized software program and home domestic home windows computer voice recognition software program application it is an ai software program application that works by allowing you to engage collectively together along with your laptop the use of voice commands it furthermore lets you try and appropriately convert speech to textual content our artificial intelligence assistant could the purchaser manipulate his pc the usage of neighbourhood language commands and simplifies your life it will possibly be a powerful private and workplace manufacturing software program application in assessment to speak-bot most importantly it truly works okay and permits you in acting duties computing tool voice assistant assists quit-person voice verbal exchange with a computer and revel in reaction to character voice commands suggested the device has the functionality to paintings offline conversation on a computer laptop its miles are known as a computer a smart to speak-bot most importantly it in reality works thoroughly textual content format and techniques it yet again returns the output in numerous techniques due to the fact the movement ought to be completed or the hunt surrender end result advised to the end-customer

Keywords:

Voice Assistant, Speech Recognition, Internet, Speech Synthesis.

Sprinkler Irrigation System

Dr K.L.Bidkar, Associate Professor and Head of Department Civil Engineering Dept. Sandip Institute of Engineering and Management, Nashik
Prof. N.R.Gangurde, Assistant Professor Civil Engineering Department Sandip Institute of Engineering and Management, Nashik
Prof. K.A.Salunke, Assistant Professor Civil Engineering Department Sandip Institute of Engineering and Management, Nashik
Prof. S.S.Barmade, Assistant Professor Civil Engineering Department Sandip Institute of Engineering and Management, Nashik
Prof. V.M.Endait, Assistant Professor Civil Engineering Department Sandip Institute of Engineering and Management, Nashik

Abstract:--

Sprinkler irrigation system distributes water by spraying it over the fields. Simulating that of natural rainfall. The spray is produced by the flow of water under pressure through small perforations and nozzles in pipelines. The pressure is usually provided by pumping water from wells, tube wells, river, canals and reservoir. With careful selection of nozzle sizes, operating pressure and sprinkler spacing, the amount of irrigation water required for refill the crop root zone can be applied uniformly at a rate to suit the infiltration rate of soil, thereby obtaining efficient water application. Sprinkler irrigation is the best method to use on soils that have steep slopes, undulating of irregular topography and on soils that are too shallow to level It is difficult, however to sprinkler irrigate if water intake rate of the soils is less than 4mm/hour. Close growing crops can be sprinkler irrigated (except rice, tobacco, and jute).It may be difficult in moving portable lateral lines in tall crops such as corn and that soft fruits should be protected from the spray when they are ripening.

Wind disturbs the spray patterns and usually reduces efficiency of the system. A careful selection on the right equipment and proper operation of the system are necessary where strong wind occurs in the area to be sprinkler irrigated.

Index Terms

sprinkler system, sprinkler irrigation

Graph Theory and It's Applications

Dr. Megha Abhiman Bhamare, K.V.N. Naik College, Nashik, Maharashtra, India

Abstract:--

Graph theory is a sub-branch of discrete mathematics which makes use of graphical representation in order to simplify and manipulate complex problems. Thus, real world problems can be represented in the form of graphs and can be minimized and solved using several graph algorithms. It helps us to picturize entities which give a great advantage in problem identification. Graph theory is used in various fields. In this paper, the researcher focused on the concepts of graphs and its applications in Electrical Engineering, Computer Science, Networking, Architecture, Biology, Chemistry, Social science and Linguistics

Index Terms

Applications, Electrical engineering, Graph theory, Linguistics, Networking, Sciences

Some Studies on Improvement of Thermal Efficiency of Household Gas Stove

Dr. N L Bhirud, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Aftab Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Imran Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Aun Peerzada, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Ibrahim Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik

Abstract:--

Gas stoves nowadays are very common in all houses counting urban and remote areas. The main power source for gas stoves is LPG. Liquefied petroleum gas (LPG) is usually used as a cooking fuel because it has higher energy content and lower emissions than other traditional fuels. Considering the limited fuel resources, energy conservation, environmental issues, increase in the demand for LPG in near future, it's necessary to explore ways to further improve the thermal efficiency of the domestic LPG cooking stoves.. In the present work, thermal efficiency of a conventional cookstove has been studied experimentally for LPG fuel. Based on the knowledge of Heat transfer and the previous research the traditional cookstove design has been modified for improving the thermal efficiency. There are three modifications; design of pan support and spill tray, number of holes in the burner and size of the fuel injector are considered. The modifications result in proper combustion of air fuel mixture and desired guidance of the flow of secondary air and hot product gases of combustion around the vessel to ensure better heat transfer rate. The thermal efficiency of the modified cookstove is around 76.3%, which is a better improvement from that of a conventional stove without modification.

Index Terms

domestic cook stove, emission, liquefied petroleum gas, thermal efficiency.

Improvement of Thermal Efficiency of Household Gas Stove-Review and Discussion

Dr. N L Bhirud, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Aftab Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Imran Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Aun Peerzada, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik
Ibrahim Shaikh, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Mahiravni, Nashik

Abstract:--

Gas stoves nowadays are very common in all houses counting urban and remote areas. The main power source for gas stoves are LPG. Liquefied petroleum gas LPG is usually used as a cooking fuel because it has higher energy content and produces lower emissions compared to other traditional fuels. Due to immense demand for LPG, aside from its limited reserve, performance improvement of the LPG cook-stoves is important. LPG plays a significant role in the transition towards a more safe, sustainable, and competitive energy model. The major source of the LPG is fossil fuels, so its huge consumption will definitely lead to its shortage in the future. Considering the limited fuel resources, energy conservation, environmental issues, increase within the demand of LPG in near future, it's necessary to explore the ways to further improve the thermal efficiency and therefore the emission characteristics of the domestic LPG cooking stoves. In the present work, performance parameters of the LPG stove such as parameters affecting thermal efficiency and CO emissions are studied. Various parameters affecting thermal efficiency of a burner such as distance between burner and pot, material of the burner, size of injector, swirl effect, pan support modification are determined. The paper is aimed to spotlight the latest add in this field and also, the areas needed to be addressed are discussed.

Index Terms

domestic cook stove, emission, liquefied petroleum gas, thermal efficiency.

Some Studies On Portable Solar Dryers And A Proposed Novel Conceptual Design Of Portable Solar Dryer

Dr. N L Bhirud, Associate Professor, Department of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik, Maharashtra, India
K. G. Chavan, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik, Maharashtra, India.
R. S. Gowda, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik, Maharashtra, India.
S. G. Kakad, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik, Maharashtra, India.
H. R. Panchal, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management,Nashik, Maharashtra, India.

Abstract:--

The unpredictable rise and frequent scarcity of fossil fuel accelerated the continuous search for an alternative power source. Solar is one of the renewable and sustainable sources of power that attracted a large community of researchers from all over the world. This is largely due to its abundant in both direct and indirect form. As such the development of efficient and inexpensive equipment for the drying of agricultural and marine products using solar power evolved thereby improving the quality of the products as well as improving the quality of life. The use of solar dryers in the drying of agricultural products can significantly reduce or eliminate product wastage, food poisoning and at the sometime enhance productivity of the farmers towards better revenue derived. A solar crop drying system does not solely depend on solar energy to function; it combines fuel burning with the energy of the sun, thus reducing fossil fuel consumption. In this paper a review of the solar dryer is presented. The various design of the solar dryer is reported in the literature thus far is presented.

Index terms

Drying, Solar Energy, Enhance productivity, Quality of life, Solar dryer.

Wireless Monitoring of COVID Affected Patients Using Zigbee Communication

Omkar Vaidya, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Sharmila Udavant, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Gayatri Phade, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Sanjay Gandhe, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune

Abstract:--

In the month of March 2020, the severe acute respiratory syndrome coronavirus hit in India and the healthcare facility severely suffered. When COVID affected patients are at peak then there is huge burden on healthcare system. There is shortage of electronic vital sign monitors and operators to monitor COVID affected patients in large numbers. The COVID-19 is highly contagious and brings about multi-organ failure in many cases. Therefore, in this paper we have developed wireless monitoring of such patients using Zigbee communication approach which is straightforward, reliable, and inexpensive and remotely operated which help to avoid spread of disease. In proposed system the monitoring of temperature, pulse rate, oxygen level of patient and saline level of liquid drugs have been employed in addition to provide a simplified Graphical User Interface on operator's dashboard in future. Our system provides real time data storage facility which is benefited to doctor for critical monitoring of patient throughout cycle right from admission, discharge and post-COVID development process.

Index Terms

COVID-19, MAX 30100 Sensor, Wireless Patient Monitoring, ZigBee.

Design & Development of Alcohol Detection with Safety Braking System

Shelke Gajanan, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
Sonawane Samruddha, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik.
Taide Jaideep, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
Rupwate Pranav, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik.
Pawar Aditya, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik

Abstract:--

The prototype that we have created is to make roads safer and avoid accidents. This prototype is made by combining Arduino board with alcohol sensor. ATmega 328 is multipurpose metal microcontroller and can be used conventionally, MQ3 is the alcohol sensor used to detect alcohol in the driver's breath. Alcohol can be sensed from 2 meters by this alcohol sensor. This prototype can be useful and implemented with any type of the vehicle on the road excluding bikes.

Trust Management Models for cloud computing: A Literature Review

Harsh Taneja, Department of Computer Science and Engineering, Punjabi University, Patiala, India
And Bharati Vidyapeeth's College of Engineering, New Delhi, India
Supreet Kaur, Punjabi University Regional Centre for Information Technology and Management, Mohali, India

Abstract:--

Cloud Computing is used as "pay per usage" system. This practice has led to reduction in cost of purchase of costly hardware, platforms and expensive infrastructure and cloud services. With transition to cloud, certain issues with respect to trust of cloud such as security, reputation, availability and many more have arisen as well. Hence, we have analyzed various trust related work done till date focusing on reputation part of trust. Numerous work consisting of collusion attacks and Sybil attacks has been discussed alongwith solutions suggested by the researchers. This literature survey will surely help researchers and professionals for doing work in the direction of enhancing trust of cloud.

Solar Window (BIPV)

Jay Rawal, Student at Dept. of Civil Eng, Sandip Institute of Engineering and Management
Bharti Kumawat, Student at Dept. of Civil Eng, Sandip Institute of Engineering and Management
Prof. Shantanu G. Pande, Prof. at Dept. of Civil Eng, Sandip Institute of Engineering and Management

Abstract:--

Well, solar energy has become a potential source for human nature and power our daily lives. The importance of solar energy is vivid and quite abundant. It can be broadly defined but some of the basic definition is: Solar energy-power from the sun-is a vast, inexhaustible, and clean resource. In short Sunlight, or solar energy, can be used directly for heating and lighting homes and businesses, for generating electricity, and for hot water heating, solar cooling, and a variety of other commercial and industrial uses.

It is cost efficient as well as environment friendly and hence it can be considered as one of the best renewable technology energy. In solar plant there are many solar panels connected and in panels there are many cell units which apparently become into a whole lot of panels. In this project we are going to discuss the effect of direct sunlight on solar panels fixed on ‘’a non-tilting’’ surface generally fixed to windows of homes or buildings. We are going to take a lot more parameters into consideration before coming to the final conclusion. The important parameters are continued further. Photovoltaic (PV) has a fast going annual rate and is quickly becoming an important part of the energy balance in most region.

Keywords:

Transparent photovoltaic Renewable energy Transparent semiconductors

Avoidance of Animal-Vehicle Collision in Self-Driving Cars using YOLO

Jeel Padiya, Dept. of Electronics and Communication Engg., Nirma University, Ahmedabad, Gujarat, India
Mansi Patel, Dept. of Electronics and Communication Engg., Nirma University, Ahmedabad, Gujarat, India
Mangal Singh, Dept. of Electronics and Communication Engg., Nirma University, Ahmedabad, Gujarat, India

Abstract:--

To improve the driving experience along with catering to the comfort of humans, the emerged concept of the self-driving car has gained its acceptance in the market. While supporting the ease of life, safety comes as a matter of concern. To enhance the sensitivity of self-driving cars concerning the appearing animals in the environment, a solution has been proposed by the authors in the paper. The idea behind the described system is to reduce the consequences caused due to the recorded Animal Vehicle Collisions (AVC). The approach of using YOLOv3 architecture for the classification and detection of the encountered animals is sketched in the paper. It also portrays the generation of the custom dataset for achieving the required performance.

Keywords

Self-driving Cars, Animal-Vehicle Collision (AVC), CNN, YOLOv3, DarkNet-53

Fabrication and analysis of Natural Air Ventilation Nozzle

Prof. Kiran D. More, Sandip Institute of Engineering and Management, Nashik
Sandip P. Pawar, Sandip Institute of Engineering and Management, Nashik
Prathmesh K. Belhekar, Sandip Institute of Engineering and Management, Nashik
Vaibhav N. Harishchandre, Sandip Institute of Engineering and Management, Nashik
Sandip Z. Rajput, Sandip Institute of Engineering and Management, Nashik

Abstract:--

In the natural ventilation of building wind energy is used to drive air into building through small opening. In low velocity regime, continuity equation governs the nozzle processes. Optimization of nozzle shape is must as a requirement of large driving force as well as minimum energy losses due to stagnation and minimum air leakage from main air stream. In the present study, we are dealing with rectangular hyperbolic nozzles. Beta (β) is an angle between two asymptotes of rectangular hyperbola. This angle has a major influence on nozzle geometry. For analysis purposes β is limited in the range of 0^0 to 180^0 and Nozzle Inlet conditions of air are taken from standards as pressure 1 bar, temperature 308 K, wind velocity 3 m/s, density 1.123 kg/cubic meter in summer season for Ahmednagar city, Maharashtra, India. In this case, Fabrication of nozzle shapes is carried out for maximum driving force at the outlet of nozzle and minimum energy lost and minimum air leakage. Experimental and theoretical calculation results for velocity, area, pressure, temperature, density distribution along the horizontal axis of the nozzle show that energy head loss and boosting of air is maximum at $\beta=0^0$,both continuously reducing up to $\beta=180^0$. Nozzle shapes when $\beta< 90^0$ having practical limit because of the leakage of airstream. But air leakages are maximum at $\beta=0$, then after it reduces up to $\beta=90^0$, then after no air leakages, Therefore unit rectangular hyperbolic nozzles (i.e. $\beta=90^\circ$) are optimum nozzle shape. Experimental analysis shows comparatively satisfactorily results with the theoretical as well as numerical analysis.

ICETET-2021 **ISBN: 978-81- 951120- 3-6**

Organized by
Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
In Association with
Institute For Engineering Research and Publication (IFERP)

Land Shaping for Irrigation

K L Bidkar, Associated professor, Sandip Institute of Engineering and Management, Nashik
Pranita Balve, Assistant professor, NDMVP'S KBTCOE, Nashik
Vishal Shinde , Assistant professor, Sandip Institute of Engineering and Management
Shantanu Pande, Assistant professor, Sandip Institute of Engineering and Management, Nashik
Vrushali Chaudhari, Assistant professor, D N patel college of Engineering, Shahada

Abstract:--

The mainly practical and environmentally way of creating irrigation assets in the coastal area is through harvesting of excess rain water that goes waste as runoff into the sea. It can be done effectively through suitable shaping of the farm land, which involves in modifying the surface of the farm land for harvesting of excess rain water as well as making the land surface suitably shaped for adoption of improved cultivation of diversified crops. The most important intention of these land shaping are for creating irrigation resources through harvesting excess rain water, diversification and multiple crop cultivation encompassing the year Employing innovative land management practices will not only serve the land degradation concerns but also enable to harvest rainwater and diversification of agriculture. A comprehensive study conducted on fertility indicated that the cutting in slope group of 1.5 to 3 % reduced nitrogen content appreciably. It is also seen that in the first two years removal of surface soil created a problem in zinc deficiency. It is therefore, necessary to augment fertility with a higher dose to tune of 1.25 times greater than usual dose.

Keywords

Land shaping, land grading, Cropping Pattern, depth of cut-fill, Water Retention Capacity

Center Pivot System of Irrigation

Dr. Kisan L. Bidkar, Associate Professor, CED, SIEM, Nashik
Prof. Kailas. T. Phalak, Associate Professor, CED, SIEM, Nashik
Prof. Ravindra N. Patil, Assistant Professor, CED, SIEM, Nashik
Prof. Vishal B. Shinde, Assistant Professor, CED, SIEM, Nashik
Dr. Sarjerao P. Ahirrao, Professor, CED, SIEM, Nashik

Abstract:--

The center pivot method of irrigation is widely used in the developed countries. Sprinkler irrigation system provided grater control than is possible with many irrigation systems. It is also having advantages of being automated more easily. The objective of an irrigation system is to efficiently and economically apply sufficient water to crop production. Efficiency is important to conserve water, energy and labour. Maharashtra state has the second largest total cultivable area but lowest percentage of the irrigated area amount all the states of the country. It is highly imperative to extend the irrigation facilities on as much larger area and to a larger society as possible .One of the practical approach to resolve the problem besides several other is adoption of water are sufficient irrigation methods , sprinkler and drip

Index Terms

Centre pivot, sprinkler, drip, cultivable area, irrigation methods.

Enhancement in Power Press Spacer Tool

L. K. Toke, Associate Professor, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Pramod Karole, Faculty, Dept. of Mech. Engg, SITRC Nasik, Maharashtra
Willson F. Ruptake, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Anas S. Peerzada, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Kalpesh.P. Patil, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Himanshu.B. Pagar, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra

Abstract:--

Presses are used in industries for a wide variety of uses including blanking, piercing and pressing. There are many different types of presses. The most popular are pneumatic presses and hydraulic presses. Pneumatic presses are 10 times faster than hydraulic presses and they can perform many jobs faster and more efficiently. Metal forming is one of the manufacturing processes which are almost chip less. These operations are mainly carried out by the help of presses and press tools. These operations include deformation of metal work pieces to the desired size by applying pressure or force. Press machine always works under impact load condition. Because of continuous impact the load, frame of press machine always experience continuous tensile stress.

Effect of the meshing methods on nodes and elements numbers during meshing of punching press operation has studied. FEA is a great way of studying the stresses, strains and deflection generated before going to real practices. Meshing serves significant role towards the correct solution from FEA. Effect of the meshing methods like patch independent, patch conforming and sweep have studied in the present paper. Modelling of the punching assembly which includes punch, sheet, blank holder and die has accompanied first then the meshing methods have applied to study the nodes and elements number. Three element sizes 10mm, 5mm and 1mm have been considered. Analysis of meshing

methods dictates that the decrement in element size increases the nodes and elements number which provides fine meshing. Results also shows that sweep meshing method can be better with low element size. Patch independent method has found to give more number of nodes and element or fine meshing.

Press tools are used to produce a particular component in large quantity, out of sheet metals where particular component achieved depends upon press tool construction and its configuration. The different types of press tool constructions leads to different operations namely blanking, bending, piercing, forming, drawing, cutting off, parting off, embossing, coining, notching, shaving, lancing, dinking, perforating, trimming, curling etc. Generally metals having thickness less than 6mm is

considered as strip. Metals having thickness greater than 6mm is considered as plate. In Piercing and notching the required shape periphery is cut in the work piece material. The press tool used is for Piercing operation is called as Piercing tool .The application of press operations are widely used in many industries like food processing, packing, defence, textile, automobile, aircraft and many apart from manufacturing industry.

In this connection an attempt is made on to learn the press tool design, materials, manufacturing used for press tool and calculations involved in it. In this work, a real time design of a simple piercing press tool and manufacturing of a prototype is made along with static analysis of punch where the output is a Pierce hole and notch hole. The press machine is of mechanical type of 200ton. Here the problem statement of project is two combine these two piercing and notching operation. Which is now manufacturing separately i.e. two piercing by one punch and two notching operation with another punch.

ICETET-2021 **ISBN: 978-81- 951120- 3-6**

Organized by
Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
In Association with
Institute For Engineering Research and Publication (IFERP)

Modelling and simulation of Alkaline Water electrolysis

Kudala Naveen Kumar Reddy, AP IIIT, RGUKT, RK Valley, Kadapa, Andhra Pradesh, India
Lakshmana Naik R, AP IIIT, RGUKT, RK Valley, Kadapa, Andhra Pradesh, India

Abstract:--

Hydrogen being the future of green energy, one of the uses of renewable technology is the production of hydrogen from electrolysis. The water electrolyzer is a critical component of the direct energy interaction between hydrogen production and power supply fluctuations. This research aims to investigate the I-V characteristics and the effects of ohmic and activation potential on the performance of an advanced alkaline water electrolyzer. The fundamental thermodynamic and electrochemical reaction equations were used to model an advanced alkaline electrolyzer and simulate MATLAB. Finally, the activation potential is higher by 80 % than the ohmic potential, even at the same current density. When compared to published models tested against identical sets of experimental data, the model looked perfect.

Keywords:

alkaline electrolyzer, I-V characteristics, MATLAB, activation potential, ohmic potential.

Building Integrated Photovoltaic (Solar Window)

Mahendra Patil, Student at Dept. of Civil Eng, Sandip Institute of Engineering and Management
Prof. Shantanu G. Pande, Prof. at Dept. of Civil Eng, Sandip Institute of Engineering and Management

Abstract:--

For India, Where the whole country contains high supply of solar energy in most of the period of the year in all seasons except rainy season when there is reduction in availability of sunlight by approximate 70% an average of 20-25 days per 365 days in a year. To utilize the natural source of energy this research has been made. Models on this type of project has been already implemented in various countries but not yet done in India on a large scale.

This paper includes the practical study of how the solar energy can be used on small scale as homes as well as large scale as institutional buildings satisfying the role of green building. Practical model has been tested for the readings of voltage and currents to calculate the energy supply made by solar window to the appliances.

As it has been seen at many places that most of the construction buildings are fabricated with glazed panels for the good aesthetic purposes. Sometimes there is provision of stones or stylish tiles for wall cladding which results in good aesthetic purpose and this wall cladding have much more cost than simple wall with plaster so if we replaced this wall cladding with solar panels then we will get much more efficient look as well as sufficient amount of energy for our daily domestic use purpose. Also the huge industrial and educational buildings ca generate there own electricity for machinery purposes and it will get reflected in saving or conservation of coal and environmental sources we use for generation of electricity.

Keywords:

Transparent solar panel; Educational Building; MC4 connectors; Two-diode junction box; Multimeter; Integration Technology and Application.

Parameters in Environmental Impact Assessment (EIA)

Moumita Maity, Department of Bio-Sciences, Seacom Skills University, Birbhum, West Bengal
Rajarshi Banerjee, Department of Bio-Sciences, Seacom Skills University, Birbhum, West Bengal

Abstract:--

EIA makes a scientific estimate of the impacts of a project, basically a decision- making tool for the approval of a project. Before approval the process goes through baseline study, scoping, mitigation and non –technical summary. The process specifies few parameters concerning environment as well as site-specific data which need to be examine. Flora, fauna, air and water quality, waste disposal, the chemical study which will be used on the site need to be monitored first. The qualitative and quantitative parameters can be observed through water. The paper reports a study where base-line study was performed to find how much time consuming it is. On the other hand a questionnaire survey was performed to measure human behavior, their concern about environment; the health condition is getting affected due to increased pollution. As Haldia, West Bengal is an industrial city the non- technical summary stage is very much important to understand the issues around any project. Survey found 20 days for public hearing is not sufficient to study the draft EIA report. So, engineers are very much required to analyze, develop and compare a range of solutions if any pollution problem is found. Primary effects and secondary effects findings also gave a complete environmental assessment checklist..

Review on Design and Manufacturing of Thermal Energy Storage Tank Using Molten Salts For CSP

Prof. Sharad Bodke, Assistant professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Vishal Bagad, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Pankaj Chaudhari, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Vinayak Shewale, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Bhushan Borse, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India

Abstract:--

CSP plants are unique among renewable technologies in that they provide utility-scale, dispatchable electricity to the power grid. Dispatchable delivery means power is reliably available when it is needed to meet the utility load demand. This feature is due to the incorporation of TES into the power plants. TES allows electricity to be generated consistently at times when sunlight is not available, including momentary cloud transients, which otherwise disrupt electricity generation and cause widely varying power output. For longer time scales, TES allows CSP plants to generate electricity well into the evening hours when electricity is highly valued, making the power plant more cost effective. TES also allows greater use of the turbine and other power-block components. These features provide an economic incentive for the addition of TES. Without TES, CSP solar power is an intermittent power resource that depends on sunlight availability. In addition to enhancing CSP dispatchability, TES enables increased deployment of renewables in general by adding flexibility to a grid with photovoltaic and wind power systems

Index Terms

thermal energy storage (TES); concentrated solar power (CSP)plants

Computational model for preventing health hazards

Pankaj Rahi, University Institute of Computing, Chandigarh University, Mohali (Punjab) India
Sanjay K. Sharma, University of Hydrabad,Tengana, India
Manoj K. Sharma, Center for Emerging Areas in Science and Technology, Panjab University, Chandigarh, India

Abstract:--

The COVID-19 pandemic situation has created an enormous influence on the routine life of the every individual globally including the school going children. Extensive lock-down and closure of Schools and learning institutes, children are of all ages facing multiple adverse health impacts including their physical activity and growth, social, emotional health and mental health beings. The children are exposed to high-end radiations emitted due to the compulsion and use of various electronic devices, gadgets for large set of time which further leading to short and the long-term adverse health impacts. Although there are many positive impacts of this scenario on the kids that they have learned to be in 3Rs as Reassurance, Routine and Regulations at home and even many of them gained the self-confidence of representing their words over the eClasses. Also the urban air quality has also improved due to commutation of lesser daily-density of vehicles. The digital quarantines have been occurring on daily basis for the children during the school timings and even beyond that or till the completion of their daily assignments or homework. This routine exposure of the gadgets generates the huge health concerns of children. Hence the innovative modelling for digital learning have been suggested in this research paper for reducing the radiation level and their health impacts on the user. The digital recommender system for eSchooling or digital learning will help the user to reduce the health-threats generated using the e-platforms enabled systems functional within their proximity. The experimental computational model will also be defined for supporting the evidences and preventing the health hazards being occurring to the children on the exposures of rations of electronic-gadgets.

Index Terms

eHealth, SAR, eSchooling and eClasses, Green-Computing, Radio-frequency (RF) Electromagnetic Frequency (EMF).

Watershed Management of Bindusara River using QGIS

Pradnya Anil Mahire, M-Tech P.G. Student, Department of Civil Engineering,Government Engineering College Aurangabad
Dr. R.M. Damgir, Associate Professor Civil Engineering Department, Government Engineering College Aurangabad.

Abstract:--

Groundwater is one of the world's most valuable natural resources, since it serves as the foundation for all human activity. Although water shortage has a negative impact on a region's related to social and environmental activities, this issue may be handled to a degree by recognizing groundwater resources and evaluating the quality of the water in those zones throughout their useable time, i.e. post-monsoon to pre-monsoon. This contributes to the uniform distribution of the water demand load, allow for the most effective use of the region's water availability. Due to their ability to identify many ground features indicative of the presence of groundwater, GIS systems and satellite pictures are widely used in groundwater research. The processing and analysis of remote sensing data is a fast and a cost-effective method for determining and analysing the availability of groundwater in the research region. Additionally, quality checks on ground water ensure that it is suitable for a wide range of uses throughout the course of its useful life.

Design and Development of Solar Power Aeration Systems

Prof.Prakash .M. Sutar, Assistant Professor, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Ashish Khainar, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Gautam Kadam, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Hemant Chaudhari, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Darshan Datrange, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik

Abstract:--
Biological treatment of organic material and ammonia requires ample oxygen to facilitate degradation and removal. However, minimal Dissolved Oxygen (DO) is typically present in raw wastewater, and must be added to the treatment process to enhance and facilitate biological removal of soluble organic material and ammonia. Water Resource Recovery Facilities (WRRFs) rely on aeration systems to transfer oxygen from a gaseous state to a dissolved liquid form that is available to support biological treatment. Aeration can be provided through mechanical agitation of the liquid surface to entrain DO in the aeration tanks (mechanical aeration) or through introducing oxygen into the aeration tanks through porous devices (diffused aeration).

Index Terms
Dissolved, Ammonia,Aeration,Porous

Performance Analysis of Image Thresholding Methods on Cervical Cancer Pap smear image for Segmentation

Pratiksha D.Nandanwar, Department of Electronics and Telecommunication Engineering, PhD Research Scholar, AISSMS IOT, Savitribai Phule Pune University, Pune ,India
Dr.Vijay M.Wadhai, Department of E&TC, Principal, DYPATIL College of Engineering, Akrudi, Pune, India.
Akshita S.Chanchlani, Department Computer Science and Engineering, PhD Research Scholar, SGBA University, Amravati, India

Abstract:--

Cancer is a disease where anomalous cells grow with no control and can march into other tissues. Cervical cancer is most widespread cancer in women globally. In view of challenges and limitations of the existing manual screening test on, it is essential to achieve the intelligent system with superior exactness for detecting cervical cancer abnormal cells at early stage. Image processing in medical field is most significant and tough as early detection and analysis of cervical cancer is difficult and time consuming task. For improving early detection and treatment stages in various cancers Image processing techniques are used. Dividing the image into numerous segments for the purpose of locating objects and boundaries in image is done by using Image segmentation method. Image thresholding is one of the techniques of image segmentation which binarize the image based on pixel intensities as it divides the image into two groups of pixels i.e black and white pixels . This paper focuses on implementation of two techniques that are simple thresholding and adaptive thresholding specifically on pap smear images of Cervical cancer. For implementing the proposed work results of Image thresholding python openCV library is used. To verify the comparative performance of each technique, black pixel and white pixel ratio has been calculated.

Index Terms

Cervical cancer,Pap smear image, Segmentation, image thresholding, Pre-processing.

A Review on Design and Development of Hybrid Two-Wheeler

Prof. S.M.Mahajan, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg And Mangement,Nashik
Nikhil Pakhale, Under Graduate Student Mechanical Engg. Dept
Pankaj Lohar, Under Graduate Student Mechanical Engg. Dept
Tanmay Borse, Under Graduate Student Mechanical Engg. Dept
Ajinkya Bhagat, Under Graduate Student Mechanical Engg. Dept

Abstract:--

As the use of fuels like petrol/diesel are increasing day by day due to which the availability of fuels is decreasing. Because of excessive use of fuels the environment is getting more polluted. That's why our review is to focus on a two-wheeler Vehicle which will be hybrid; there will be electric drive as well as I.C. Engine. Hybrid-electric vehicle (HEV) combines the advantages of petrol engines and electric motors and may be configured to get different objectives, like improved fuel economy, increased power, and reduced emission leads to a green environment. In recent days, the availability of fuel sources is depleting day by day, and thanks to more consumption of fuel, environmental pollution is increasing. For bitting that issue, we have remodeled our bike as a hybrid bike which suggests the vehicle can use electrical power additionally for its working. Initially, the vehicle runs in fuel mode and after saving energy from this using regenerative microcontroller, electric mode starts, both engine and motor are utilized in case of high load carrying and quick travel. This lead the way of evolution of various alternative fuels and concepts, in this HEV system is one of the effective systems. The hybrid concept looks quite better as it not only decreases the per km cost of the consumer but also enhances the range of the drive.

Key Word

Hybrid electrical vehicle (HEV), BLDC hub motor, Regenerative Microcontroller, Bidirectional converter, Internal combustion Engine (ICE)

Automatic Job Loading and Unloading On CNC Lathe Macine

Prof.C.R.Patil, (Mechanical Dept.), Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik, BE Mech.Students,
Deepak Jagtap, (Mechanical Dept.), Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik, BE Mech.Students,
Bhavesh Nunse, (Mechanical Dept.), Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik, BE Mech.Students
Dhiraj Mahajan, (Mechanical Dept.), Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik, BE Mech.Students,

Abstract:--

Industries in the recent days concentrating on computer numerical control (CNC) machineries for mass production by replacing convectional ways to improves productivity and quality however recently machine tool manufactures are coming with solution including automatic loading and unloading to reduces fatigue of labour and reduces cycle time and increasing productivity. The automation of machine tool resulted higher cost of machinery, hence medium scale company are difficult to upgrade. In this project we have introduce a low costing solution for the automation of loading and unloading for dedicated component with dedicated CNC turning centre. The project title "Automation Loading and Unloading of Job on the CNC Lathe Machine" this project involves the use of automation using pneumatic system to reduces numbers operator and increases efficiency. Development of automatic loading and unloading method with pneumatic arrangement in the manufacturing of nozzle pin resulted in increasing operation cycle time, efficiency, production quality and labour cost, as well as the use of additional machine and labour can be minimizing since single operator can handle two machines. Hence, we can achieve the higher production at lower labour cost.

Design and Manufacturing of Double End Drive Machine for Exhaust Assembly System

L. K. Toke, Associate Professor, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Vaibhav K. Bachhav, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Sumit V. Sansare, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Sumit B. Bansode, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra
Tushar B. Bhagat, UG Student, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik, Maharashtra

Abstract:--

In industry, there are different geometrical shapes to which an operator has to weld. Each and every shape carries its own operational constraints. Circular welding is one of the most critical welding process carried out manually, especially when accuracy and uniformity is of high concern. A manual mode of circular welding carries so many disadvantages like lower accuracy and precision, high wire, gas and electricity wastage and frequent micro cracks. This gives rise to need of automation for circular welding. This work aims to design double end drive (DED) machine for automation of circular welding process in exhaust system.

Design & Development of Fatigue Testing Machine for Leaf Spring

S.J.Chede
Ganesh Jadhav
Saurabh Deshmukh
Akshay Matsagar
Shubham Khandbahale

Abstract:--

A fatigue is a failure of material or machine due to the action of repeated or fluctuating stress on a machine member for some number of times.. A spring is defined as an elastic body, whose function is to distort when loaded and to recover its original shape when the load is removed. Leaf springs absorb the vehicle vibrations, shocks and bump loads (induced due to road irregularities) by means of spring deflections, so that the potential energy is stored in the leaf spring and then relieved slowly. Hence in this study the fatigue testing of leaf spring is developed with the help of slider crank mechanism. The Impactor theory is used which is connected to slider crank mechanism. The readings of fatigue loading can be obtained in form of deflection with the help of Strain Gauge and Load Cell. In the current study the impact mechanism is developed by providing the inversion of single slider crank chain mechanism. The Impactor has been designed for total weight of 250N hence the same impact force. The Leaf spring can be subjected to the load of 250N acting with sudden jerk at regular interval.

Experimental Study on Fibre Reinforced Concrete Incorporating Banana Fibre

Ravindra Narendra Patil, Dept. of Civil Engineering, Sandip Institute of Engineering and Management
Koli Revati Sudhakar, Dept. of Civil Engineering, Sandip Institute of Engineering and Management
Mahajan Vaibhav Ravindra, Dept. of Civil Engineering, Sandip Institute of Engineering and Management
Talele Tejal Arun, Dept. of Civil Engineering, Sandip Institute of Engineering and Management

Abstract:--

A The demand for sustainable building materials at low cost is growing as social, economic, and environmental issues evolve in today society. In this report the term "Enhancing the properties of concrete by using banana fiber" is use as a generic name to cover a wide range of building materials. It increases the utilization of local material and reduces the transportation cost as the production is in situ, makes quality housing available to more people, and generates local economy rather than spending for import materials.

Keywords

Silica fume, Fly Ash and Banana fiber, Admixtures, bio degradable, value addition, weather proof.

Design and Investigation of Braking System in a Hovercraft prototype with Full Basic Function

Sachin Chede, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Paritosh Sharma, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Gaurav Rajput, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Rahul Ghuge, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Mahendra Chavan, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.

Abstract:--

Braking system is introduced in a hovercraft so that the pilot can either decrease the magnitude of forward moving velocity or change the direction of velocity within a shorter time frame. For that two carbon fiber buckets are the core element of thrust reversing technique. The buckets are pivoted behind the propeller fan 1.8 m long 0.92 m wide. AL 6061-T6 aluminum alloy hull hovercraft prototype with required lifting force 1500 N is used, 31 Kg engine coupled to the propeller produces a thrust of 750 N. 0.88 m long rudder moves thrust towards left or right ensuring maneuverability in the hands of pilot while braking for the stability. 0.42 m long twin blade propeller, two concave buckets 0.88 m horizontally long and 0.9 m vertically wide are on either sides of propeller shaft to fully cover the fan. The bucket cavity extending beyond the blade tips by 0.44 m generates reverse thrust for braking. The buckets pivoted in a bracket are actuated individually by two hydraulic ram actuators with four way DCV and gear pump. Intermittent breaking is achievable by moving buckets in front or away from the propeller fan. So far no literature exists in public domain regarding braking system in hovercraft up till now. Hence the proposed model shall be tested for validation to strengthen the defense and rescue line of hovercrafts currently deployed in seas and difficult geographical terrains.

Index Terms

ACV (air cushioned vehicle), DCV Directional control valve.

Manually Operated Fertilizer Spreader

Jaggi S.S, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik
P. S. Baravkar, Phd Research Scholar, Sandip University Nashik, India
Kangane P.R, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik,
Jagtap G.S, Student at Department of Mechanical Engineering, University of Pune, SND COE&RC, Bhabulgaon, Yeola, Dist. Nashik,

Abstract:--

A method was generated to spread the fertilizer uniformly over a fallow land by dropping the fertilizer over the impeller disc. The system consists of a three wheels, two at the front and one at the back. These two wheels at the front are used to impel the fertilizer. The two hoppers are used to store the fertilizer; these hoppers are placed at some height from the wheel axle so that the fertilizer falls on to the impeller. The hopper is provided with flow control mechanism. In fertilization, the flow maintenance is necessary. Generally every crop should get sufficient amount of fertilizer. This condition is satisfied by Spring Mechanism. In normal conditions spring is not in tension and hopper is closed. As operator apply tension on the spring, controlling plate moves backward and hopper is open. Below this system there is an impeller. It is mounted on output shaft. Hooper opens on Impeller eccentrically and due to centrifugal action fertilizer spreads in the farm. This high value of centrifugal force is generated by the help of proper gear reduction ratio. The gears are coupled to the shaft of wheel.

With this machine, percentage reduction in time required for Fertilization was observed to be 50% and reduction in labor cost as compared to conventional method was 80%. It has solved the problem of traditional way of Fertilization.

Keywords

Fertilizer spreader, Flow control mechanism, centrifugal force, labor cost and fertilization time

A Review on Developments and futuristic challenges in Compliant mechanism

Sandesh B Solepatil, Research Scholar, Pimpri Chinchwad College of Engineering ,Pune
Dr.N. R Deore, Professor, Pimpri Chinchwad College of Engineering, Pune

Abstract:--

In today's fast-moving and competitive world, the engineering applications are evaluated based on the precise and accurate results. The intense need for precision motion is achieved with the help of deflection of beams in compliant mechanism. A special class of mechanism is referred to as compliant mechanisms that are based on the rigidity and mobility of a component, which lead to greater precision without affecting its accuracy.

Motion is created by molecular deformation with bending of beams in elastic zone. Compliant mechanism are used in modern techniques such as micro-nano processing microscopy, biomedical scanner are existing mechanisms for precision scanning. Linear compliant mechanisms are used in precision applications such as optical scanner, biomedical scanner and micromanipulator for robotic surgery. Major failures of compliant mechanism are due to in plane and out of plane movement of compliant beams for the repetitive use .for the rotational movement of compliant mechanism hinges are used that are subjected to axial bending. Life of compliant mechanism needs to improve for large deflection values. Major drawbacks of available compliant mechanism are end to end deflection occurs for the various actuating force which can be eliminated by using high axial stiffness values, high yield strength to modulus of elasticity ratio and optimum contour radius of hinges This research article gives you insights into developments in small and large range of Compliant Mechanism, selection of material and actuators for precise range of motion and Challenges in designing of New Compliant Mechanism.

Keywords:

Precise motion, Compliant mechanisms, Actuators, Synthesis Methods of Compliant Mechanism

Credit Card Fraud Detection

Shalini Sinha, Galgotias University
Sachin Chauhan, Galgotias University
Sudhanshu Singh Parihar, Galgotias University

Abstract:--

Billions of dollars of loss are caused every year by fraudulent credit card transactions. The design of efficient fraud detection algorithms is key for reducing these losses, and more and more algorithms rely on advanced machine learning techniques to assist fraud investigators. The design of fraud detection algorithms is however particulary challenging due to the non-stationary distribution of the data, the highly unbalanced classes distributions and the availability of few transactions labeled by fraud investigators. At the same time public data are scarely available for confidentiality issues, leaving unanswered many questions about what is the best strategy. In this thesis we aim to provide some answers by focusing on crucial issues such as: i) why and how under sampling is useful in the presence of class imbalance, ii) how to deal with unbalanced and evolving data streams, iii) how to assess performances in a way which is relevent and detection and iv) how to use feedbacks provided by investigators on the fraud alerts generated. Finally, we design and assess a prototype of a Fraud Detection System able to meet real-world working conditions and that is able to integrate investigators' feedback to generate accurate alerts.

Keywords:

credit card, fraud detection, online shopping, e-commerce, logistic regression.

Developing the Condition Index for the condition assessment of ESR

Shrikant R. Baviskar, Research Scholar, Sandip University, Nashik
Dr. Arun Kumar Dwivedi, Professor, Sandip University, Nashik

Abstract:--

The condition of Elevated Service Reservoir (ESR) in rural areas of India is very poor, as it is always neglected after the construction. The repairing and maintenance of the ESR depends upon the interest of stake holders in the area, budget and financial condition of local authority and also on the political will of local leadership. There is no index available which would state the condition of ESR to decide the priority of repairs and maintenance required to keep it in serviceable condition. The study deals with developing the condition index (CI) for ESR in rural water supply system (RWSS). The ESRs constructed rural area near by the Nashik city were inspected as per the methodology developed. Entire structure is divided into the main & sub components of structural and non-structural group. The factors and sub factors influencing the condition ESR are listed and used for developing CI. These factors and sub factors identified through the data collected from the visual inspection & different non-destructive tests (NDT) at site. The D.E.R method is used to develop the CI. The CI can be used as metric for assessment of condition of ESR. This can be used for predicting future conditions and thus to fix the budget for repair and maintenance.

Index Terms

Condition Index, DER method, Elevated Service Reservoir, Rural Water Supply System

Farmvil

Tanishq Pundir, School of computer science & engineering, Galgotias University, Delhi,India.
Akash Srivastava, School of computer science & engineering, Galgotias University, Delhi,India.
Rishabh Bajpai, School of computer science & engineering, Galgotias University, Delhi,India.

Abstract:--

Android is a versatile working system subject to a changed variation of the Linux piece and other open-source programming, arranged fundamentally for touchscreen. It is made by Google and later the OHA (Open Handset Alliance). Java language is dominatingly used to create the android code in spite of the way that various dialects can be utilized. The goal of android adventure is to make a productive real thing that improves the versatile experience for end customers. The application created in the android are exceptionally effective and are extremely easy to understand which can be utilized in pretty much every field of society. In this way, they can likewise be utilized in tackling cutting edge cultivating issues. Despite the tremendous degree mechanization of agribusiness in specific bits of the country, most of the provincial exercises in greater parts are carried on by human hand using fundamental and standard instruments and executes like wooden wrinkle, sickle, etc. Practically no usage of machines is made in furrowing, planting, watering and pruning, weeding, procuring filtering and moving the yields. This is exceptionally the circumstance with little and minor ranchers. It achieves gigantic wastage of human work and in low yields per capita labor force. Agrarian advancing still continues being in a horrible shape in country India. Without sound displaying workplaces, the farmers need to depend on neighborhood traders and middle people for the evacuation of their residence produce which is sold at dispose of cost. So to give the data about these systems, and about the new gadgets we will make an application. Likewise, from this application nobody however people can buy the developing things from the farmer directly so the work of focus man will be finished

Index Terms
Android App, Agriculture, Computer Science

Design and Development of RF Detector

Shristi Tiwari, Electronics and Communication Department, Abes Engineering College, Ghaziabad, Uttar Pradesh
Tanvi Sharma, Electronics and Communication Department, Abes Engineering College, Ghaziabad, Uttar Pradesh
Tanvi Agarwal, Electronics and Communication Department, Abes Engineering College, Ghaziabad, Uttar Pradesh
Tanya Anand, Electronics and Communication Department, Abes Engineering College, Ghaziabad, Uttar Pradesh

Abstract:--

Communication is one of the most important things in life. In the last few decades however, we have seen a dramatic change in the telecommunications industry, a change that is said to be greater than the introduction of wheels. The cell phone has become one of the fastest growing technologies and daily necessities of life in the world today and often transmits and receives radio signal signals at a distance of about 30cm at about 872 to 2170MHZ. Signals are transmitted in the form of radio waves and contain electromagnetic radiation selected by the receiver at a low-level station. Features of mobile phones include GPS, PDA, MP3 the rapid growth of mobile phones eventually raises issues such as their abuse of power to attack privacy and to disrupt daily life. Many people, whether intentionally or unintentionally, abuse their cell phones in restricted or unauthorized locations. Due to this fact, it has been necessary to design a cell phone detector to prevent unauthorized access and to prevent unauthorized data transfer in the event that a person is able to access the cell phone safely.

Travel Chatbot for Recommendation as Per the User Preferences

Ujwal Kinge, Department of Electronics & Telecommunication, Dr. D Y Patil Institute of Engineering Management & Research, Akurdi Savitribai Phule Pune University, Pune, India
Dhaval Kinge, Department of Electronics & Telecommunication, Dr. D Y Patil Institute of Engineering Management & Research, Akurdi , Savitribai Phule Pune University, Pune, India
Tarun Pardeshi, Department of Electronics & Telecommunication, Dr. D Y Patil Institute of Engineering Management & Research, Akurdi , Savitribai Phule Pune University, Pune, India

Abstract:--

People often travel to new destinations to explore. In this case, they get the help of a traditional travel agent or online travel websites. These provide them the information about the destination which they want to travel. As the destinations are new to the user, they have no idea about the places to visit, hotel bookings, tourist attractions, or mode of transportation. The traditional travel agent and travel website fail to provide detailed information about these things to the user who is traveling. To overcome this flaw, we present a solution by using an AI-based travel chatbot. Through the study of various papers about artificial intelligence, we found that by using the data available on the internet and user reviews on various online platforms we can train the model and create a chatbot that can help its user to get detailed information about their travel destination. There is various algorithm which can be used to create the chatbot. By training the model using these algorithms we can find which algorithm is the most efficient and use it to create the chatbot. The chatbot would collect user preferences and model a collective user knowledge base and give recommendations to the user. The chatbot can provide accurate predictions based on previous user travel preferences.

Index Terms

About four key words or phrases in alphabetical order, separated by commas.

A Sample Paper on need of U-Loop Traffic System

Prof.V.B.Shinde, Prof.Civil Engg. Dept. Sandip Institute of Engg.And Mangement,Nashik
Viraj Navandar, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Anuj Nagare, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Hemangi Sonawane, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Tanmay Avhad, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik

Abstract:--

Vehicle is the main constituent of the transportation system. Vehicle is used for convenience and for time saving purpose. Therefore vehicles are increasing day by day in number because of communication social purpose also. Our Nashik city in Maharashtra is fastly growing city among the country as well as world and it is declared as metro city before some years. And like kumbhmela sudden increase in traffic in kumbhmela period. So need the management of traffic and supporting the safe driving and to solve the problem of traffic. This paper reviews on need of u-loop traffic system at Bombay Naka for controlling traffic

Keywords

Transportation Management, U-Loop, Traffic Signals

Use of Recycled Aggregate in Reinforced Concrete Pavement

Vishal B Shinde, Assistant Professor, CED, SIEM, Nashik
Shantanu Pande, Assistant Professor, CED, SIEM, Nashik
Pranita Balve, Assistant Professor, CED, KBTNDMVPCOE, Nashik
K L Bidkar, Associate Professor, CED, SIEM, Nashik, CED, SIEM, Nashik
Vrushali Chaudhari, Assistant professor, D N Patel college of Engineering, Shahada

Abstract:--

The present investigation essentially aims at establishing all the physical and mechanical properties of recycled aggregate on rational scientific basis and to evolved a suitable mix design based on typical characteristic of recycled aggregate exclusively for recycled aggregate concrete. To attain the above said objectives, extensive experimental program has been planned. From concrete test specimen have been used as a source concrete for generating graded recycled aggregate of 20mm maximum size. Variety of aggregates as stated above, have been tested for their all physical and mechanical properties. Reduction in specific gravity accompanied by sharp increase in water absorption due to the presence of adhered cement mortar with the aggregate particles is notable observation. By observing 4 different mixes in their above derived relationship, the performance of recycled aggregate concrete designed by proposed method have been compared with the corresponding recycled aggregate concrete and conventional concrete designed by IS, ACI, & BS methods. The mix cases designed by proposed method have yielded relatively good and satisfactory results for a recycled aggregate concrete both in their fresh and hardened state, thus indicating the suitability and efficiency of the proposed method of mix design. All 4 mix cases have been examined for evaluating relative performance of recycled aggregate concrete in terms of for its short term and long-term properties.

Keywords:

Pavement quality concrete, Recycled aggregates, Time lag, Rigid Pavement.

Image classification of hydroponic Fenugreek leaves

K.Rajeswari, Head of Department,Pimpri Chinchwad college of Engineering,Computer Department
Manjiri Gaikwad, SY-ME-Computer,Pimpri Chinchwad college of Engineering.

Abstract:--

The rise of hydroponics system has increased due to the loss of minerals and nutrients in the soil. These nutrients are missing due to increase in pollution in soil. The excess use of chemicals and hybrid fertilizer has resulted in the decrease of the true organic soil. Hence, due to this reason the crop cultivated in the organic soil are found to be decreasing day by day. And therefore the minerals needed for the crop to grow are missing. To avoid this situation, the phenomenon of hydroponics has arrived. Incase of the hydroponics system the plants or the crop are grown in water without making the use of soil. The nutrients present in the soil are provided to the plants through water in liquid form. And a motor is used in order to carry the water through the pipes to the plants. Hence, in this approach the Fenugreek plant is grown on such hydroponic system. And the leaves of those are captured using mobile phones. And then image classification on it by using CNN, MLP, etc.

Keywords:

CNN,MLP, Hydroponics.

A literature Survey of on the Design Issues on RIS and IRS-aided Wireless Networking

Nitin Dwivedi, Student, M.Tech (CSE), CSE Dept, Naraina Vidya Peeth Engineering & Management Institute;Kanpur, (UP) India
Atul Mathur, Professor & Head, CSE Dept, Naraina Vidya Peeth Engineering & Management Institute; Kanpur, (UP) India

Abstract:--

There has recently been flourishing study on the application of RIS in wireless networks for the development of intelligent radio environments. In an intelligent radio environment, surfaces may programmably manipulate the spread of incoming electromagnetic waves to actively affect the channel performance, making the wireless channel a controlled system block that is optimised in order to increase system performance. In this article, we present an overview of wireless communications' reconfigurable smart surfaces (SRIs). We present the working concepts and develop several application applications employing metasurfaces and reflectarrays for customizable intelligent surfaces (RIS). The smart reflecting surface is a technology that enables the extension of a radio signal in wireless networks to be developed. IRS can intelligently change wireless channels to improve communication performance by intelligently modifying signal reflection over a large number of cheap passive reflecting components. Thus, a new hybrid wireless network with active and passive components that is supported by the International Revolutionary System is predicted to deliver sustained, cost-effective increase in capacity in the future. IRS confront new problems, despite its huge potential, to be incorporated efficiently into wireless networks including the optimization of reflection, channel assessing and deployment from the standpoint of communication design. We present a tutorial on the wireless communication assisted by the IRS, which addresses the aforementioned challenges and develops their reflection and channel designs, hardware architecture and practical limits, and numerous interesting wireless network applications.

Index Terms

Intelligent reflecting surface (IRS), smart and reconfigurable environment, IRS-aided wireless communication, IRS channel estimation, passive information transfer, and resource allocation.

An Experimental Study on Properties of Rice Husk Ash for Replacement of Cement in Concrete

Om V. Vaidya, SNJB's Late Sau. K. B. Jain College of Engineering, Department of Civil Engineering, Chandwad, Nashik 423101, Maharashtra, India
Yuvaraj L. Bhirud, SNJB's Late Sau. K. B. Jain College of Engineering, Department of Civil Engineering, Chandwad, Nashik 423101, Maharashtra, India

Abstract:--

The previous study on rice husk ash suggests that the optimal replacement level for rice husk ash in concrete is 10% of the total cement weight. India is one of the major rice manufacturers and one of their product that is rice husk. The concept of new development and thinking, this paper is created by partially replacing cement with rice husk ash which is an environmental threat that is introduced into the concrete mix to reduce the damage to the earth. The different percentage of RHA is used in concrete mix (i.e. 0 %, 5 %, 10 % and 15 %) the grade of concrete is M25 and determine 7 days and 28 days strength. RHA is economical that is the main concept replacement of cement with RHA. It may be a unique concept in the current scenario, but it has a wide range of meanings in the future.

Index Terms

Rice Husk Ash, OPC, Mechanical Properties, Compressive Strength

Enhancement in Structural Performance of Reinforced Concrete Building By Prestressing External Beam Column Joints

P.M.Yeole, Civil Engineering Department, (Research Scolar), Sardar Vallabhbhai NIT,Surat, India
Y.L.Bhirud, Civil Engineering Department,(Professor),SNJB'S LSKBJCOE, Chandwad, Nashik,India
Y.D.Patil, Civil Engineering Department, (Associate Professor),Sardar Vallabhbhai NIT,Surat,India

Abstract:--

The beam column joint is the critical zone in a reinforced concrete moment resisting frame. It is subjected to large forces during severe ground shaking and its behaviour has a significant influence on the response of the structure. Understanding the joint behaviour is essential in exercising proper judgments in the design of joints. Various researchers have carried out rigorous work on this issue. The work includes use of self-compacting concrete, EAF slag concrete, concrete with crumb rubber, GFRP concrete, CFRP concrete, steel jacketing to beam column joint, external prestressing etc.

In this paper, a new and innovative diagonal prestressing technique is presented to enhance the behaviour of reinforced concrete multistoried structure. In this article a three storied reinforced concrete frame is analysed using STAAD Pro V8i software for two conditions viz. prestressed and non prestressed subjected to seismic loading. Results are obtained for nodal displacement, support reactions and beam reactions i.e. axial forces, bending moments and shear forces. It is observed that, diagonal prestressing technique is beneficial in reducing nodal displacement, support reactions and beam reactions. This analysis finds diagonal prestressing as a useful technique to improve structural performance under gravity loads as well as lateral loading.

Keywords

beam column joint, diagonal prestressing, seismic loads, earthquake.

Robot using PID Algorithm toTrace line

Priyanshu Joshi, Galgotias University Greater Noida,Uttar Pradesh,India
Varnit Rana, Galgotias University Greater Noida,Uttar Pradesh,India
Syed Farid Abbas, Galgotias University Greater Noida,Uttar Pradesh,India
S. Jerald Nirmal Kumar, Assistant Professor -SCSE GALGOTIAS UNIVERSITY UTTAR PRADESH- 201308,INDIA

Abstract:--

A robot that follows the line and avoid obstacles to reach a specific destination, using ir sensor , ultrasonic sensor,display screen, Arduino uno as microcontroller which works as the mind of the robot.. The microcontroller inserts a signal from the IR sensor and analyzes the signal and instructs its motor motors to start the left or right car or both. We will also introduce an ultrasonic sound sensor that will be used to detect obstacles and change direction and return to its line. There will be IR sensors so that the robot following the line is more accurate.

Keywords

ir is for Infrared sensors.

Role of shear deformation function on the exural parameters in the functionally graded beam

S A Patare, Civil Engg., Department, SNJB's Late KBJ College of Engineering, Chandwad, Nashik
Y L Bhirud, Civil Engg., Department, SNJB's Late KBJ College of Engineering, Chandwad, Nashik

Abstract:--

Shear deformation function is the most researched parameter in the eld of analysis for plates and beams. These functions play a critical role in terms of accuracy beam analysis theory. The four variable models now is the most focused mathematical model in the analysis of beam, plate. In this study, a functionally graded beam is analyzed for the eect of shear deformation function on exural components. Functionally graded material properties are assumed to be varied over the thickness of the beam as per the power law. The simple mathematical formulation is presented with an approximate solution for complicated boundary conditions. Tabular results are presented for validation and reference for any new proposed work on a similar aspect.

Keywords

Beam theory four variable exure approximate solution

A.I. Based Document Digitization

Sujoy Dev, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Rashmi Shetty, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Priya Naik, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Kiran B. Deshpande, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Sameer Nanivadekar, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India

Abstract:--

One of the crucial challenges faced by every industrial organization is the maintenance of records, mainly non-digitized type, i.e. hard copies and prints. While a few documents can be obtained in a pre-digitized format, majority of the documents which are crucial in nature remain non-digitized. Such documents are majorly billing invoices, which contain all the information about the seller, consumer, products, prices/taxes etc. Extraction of such data requires manual labour which is prone to human error and expensive. Hence data extraction systems are becoming increasingly important for cost cutting, efficient data processing and analysis. This paper presents a application that can be built using modern software technologies that can be used to automate the process of data extraction from invoices (single/bulk) by performing image processing,character/pattern recognition. This application will provide notifications to it's users about the metadata extracted from the documents such as the Invoice ID, amount, etc. as a reminder with the help of date parameters, if any. This application will also allow training of a centralized model to extract newer fields which were previously unidentified.

Keywords:

Named Entity Recognition (NER), Image Processing, Assistive Technology, Natural Language Processing (NLP), Optical Character Recognition (OCR), Data Extraction

A.I. Based Document Digitization

Sujoy Dev, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Rashmi Shetty, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Priya Naik, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Kiran B. Deshpande, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India
Sameer Nanivadekar, Department of Information Technology, A. P. Shah Institute of Technology,Thane, India

Abstract:--

One of the crucial challenges faced by every industrial organization is the maintenance of records, mainly non-digitized type, i.e. hard copies and prints. While a few documents can be obtained in a pre-digitized format, majority of the documents which are crucial in nature remain non-digitized. Such documents are majorly billing invoices, which contain all the information about the seller, consumer, products, prices/taxes etc. Extraction of such data requires manual labour which is prone to human error and expensive. Hence data extraction systems are becoming increasingly important for cost cutting, efficient data processing and analysis. This paper presents a application that can be built using modern software technologies that can be used to automate the process of data extraction from invoices (single/bulk) by performing image processing,character/pattern recognition. This application will provide notifications to it's users about the metadata extracted from the documents such as the Invoice ID, amount, etc. as a reminder with the help of date parameters, if any. This application will also allow training of a centralized model to extract newer fields which were previously unidentified.

Keywords:

Named Entity Recognition (NER), Image Processing, Assistive Technology, Natural Language Processing (NLP),Optical Character Recognition (OCR), Data Extraction

Automatic Horn Control System for Two Wheeler

Prof. T.D.Patil, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
Varma Tejas, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
Karale Vinayak, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
Sonar Sahil, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
More Tejas, Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik

Abstract:--

Automatic Horn Control System in Two Wheeler is the System made to reduce noise pollution in urban areas. Noise pollution is the major issue in India as compared to other countries because road and regulation acts are strictly followed in other countries as compared to India. Unnecessary honking is prohibited across the globe, but it is seen that India lacks in following the basic rules passed the government. People suffer from partial or complete hearing loss. Traffic noise can lead to increased stress levels, impact sleep quality, increase blood pressure and lead to poor quality of life. This system can contribute to reduce noise pollution to some extent by controlling the honking repetition of the vehicles. This system limits unnecessary honking.

Keywords:

Arduino, Sensors, Honking

A Sample Paper on need of U-Loop Traffic System

Prof.V.B.Shinde, Prof.Civil Engg. Dept. Sandip Institute of Engg.And Mangement,Nashik
Viraj Navandar, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Anuj Nagare, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Hemangi Sonawane, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Tanmay Avhad, Under Graduate Student Civil Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik

Abstract:--

Vehicle is the main constituent of the transportation system. Vehicle is used for convenience and for time saving purpose. Therefore vehicles are increasing day by day in number because of communication social purpose also. Our Nashik city in Maharashtra is fastly growing city among the country as well as world and it is declared as metro city before some years. And like kumbhmela sudden increase in traffic in kumbhmela period. So need the management of traffic and supporting the safe driving and to solve the problem of traffic. This paper reviews on need of u-loop traffic system at Bombay Naka for controlling traffic

Index Terms

Transportation Management, U-Loop, Traffic Signals.

Design and Modelling Of Die Threading Machine

Prof.S.E.Bodake, Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Shubham Agale, Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Roshan Kedar, Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Sandesh Padwal, Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Pankaj Jadhav, Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik

Abstract:--

Now days, there is a tremendous development in the production industry and their relevant machinery to improve the productivity. But still, in small, medium and some large scale industries uses the conventional methods in some of the operations. Threading is one of them. Threading is the method to produce the thread on various machine parts, most of the machine parts are held together, adjusted or moved by threads. Most of the industries uses the conventional method says lath threading. This conventional method is very time consuming process, less accurate and includes higher labour cost, and ultimately less productivity. So thise problem is overcome by using die threading machine, with the help of different types of dies we can threads the rods with different sizes.

Design, Analysis and Weight Optimization of Rotary Table Faceplate

Akshay Mahajan, Post Graduate student DPCOE
Prof. Siddharaj Allurkar, Assistant Prof. Mechanical Engg. Dept. Dhole Patil College of Engineering, Pune
Prof. Rohit Argade, Assistant Prof. Mechanical Engg. Dept. Dhole Patil College of Engineering, Pune

Abstract:--

Analysis of a rotary table pallet will be done for a certain loading condition of an existing model and stresses as well as deflection will be determined for same model by using finite element analysis. Comparison of the results will be done, to maintain the allowable stresses and deflection. This work mainly focusses for weight and design of rotary faceplate, to find the optimum shape of the rotary pallet which has same stress & deflection by removing the unwanted material to reduce the weight of rotary table faceplate.

Design and Development of Machine Generating Water from Air

A.S.Dube, Professor (Mech), SIEM, Nashik
Prof. P.A. Karole , Faculty,Department of Mechanical Engg, SIEM, Nashik
Aniket shitole, BE Mech.Students, SIEM, Nashik
Bhiraj sonewane, BE Mech.Students, SIEM, Nashik
Milind patil, BE Mech.Students, SIEM, Nashik
Yatin sarode, BE Mech.Students, SIEM, Nashik

Abstract:--

In many countries like India it is difficult to obtain water resources for irrigation or other purposes, especially in the arid regions. The problem of water scarcity is also observed in other places of the world due to lack of rainfall. However, in highly humid areas such as places close to the sea, water can be obtained by condensing the water vapour present in air. Here, the paper presents the method to develop a water condensation system based on a thermoelectric cooler. The system consists of cooling elements, heat exchange unit and air circulation unit. Atmospheric Water Generator is a device that can convert atmospheric moisture directly into usable and even drinkable water. It is such a device which uses the principle of latent heat to convert molecules of water vapour into water droplets. It has been introduced a bit before, though it is not very common in India and some other countries. It has a great application standing on such age of technology where we all are running behind renewable sources. This paper also describes the experimental results and the system's performance.

Keywords :

Thermoelectric peltier, Dew condensation (latent heat)

Proposed Relation for Measurement of Velocity Using NDT

Ankit Kumar, Assistant professor, Mechanical Department, SIEM, Nashik, Maharashtra, India.
Atul Sonawane, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Kunal Desale, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Rajani Kore, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India
Shweta Deshmukh, Scholar, Mechanical Department, SIEM, Nashik, Maharashtra, India

Abstract:--

This trial project presents a technique for estimating stream in pipelines dependent on the vibration brought about by the progression of water, disposing of the requirement for intruding on the stream and opening the line for establishment of customary water stream meters. Test estimations are to be introduced and furthermore a metrological approval in a lab certify for alignment. To put it plainly, the method comprises of estimating the vibrations incited by the section of liquid through the pipeline, a wonder known as stream instigated vibration so the stream rate is assessed and tested and furthermore, the investigation is to be done on Simulation programming i.e., ANSYS. After we get the outcomes from Ansys, the diagrams of liquid stream viewpoints, for example, Diameter, Material, Discharge, Hydrostatic pressing factor, Vibration and Deformation are plotted for three unique materials which are generally utilized in Industries just as Domestic purposes i.e., PVC, Stainless Steel and Structural Steel. Here we accept the functioning liquid as Water. The connection between the stream rate, misshapen Ing, hydrostatic pressing factor and vibration alongside different properties is to be resolved with the assistance of Graphical portrayal of the outcomes.

Keywords:

stream estimation, pipe vibration.

Pneumatic Sealing Machine for Plastic Housing

Desale Pushpak Bhausaheb, Department Of Mechanical Engineering, School of Engineering & Technology, Sandip University, Nashik, Maharashtra, India.
Dr. Dyandeo.D. Shinde, Department Of Mechanical Engineering, School of Engineering & Technology, Sandip University, Nashik, Maharashtra, India.
Kahane Ameya Sachin, Department Of Mechanical Engineering, School of Engineering & Technology, Sandip University, Nashik, Maharashtra, India.
Derle Darshan Arun, Department Of Mechanical Engineering, School of Engineering & Technology, Sandip University, Nashik, Maharashtra, India.
Birari Yograj Rajendra, Department Of Mechanical Engineering, School of Engineering & Technology, Sandip University, Nashik, Maharashtra, India.

Abstract:--
A buzzer is a device used in semi-automatic washing machine as an indicator for starting as well as stopping of the washing cycle. In this object a improper riveting issue was noticed in many samples examined by our team. So we have proposed to implement the new ideas to overcome the problem.
This paper aims on improving the overall efficiency of the plant by observing problems at different stages of production line and provide optimum solutions to them. Paper also aims on implementing new technology and machine learning to smartly detect problems and errors in different parts with high precision and speed and thus avoid human errors in quality control.

Keywords-
buzzer, improper riveting, new technology, avoid human errors.

A Review on Aeration System Design for Optimum DO Level

Shahu Zhalte, Research Scholar, Department of Mechanical Engineering, SOET, Sandip University, Nashik
Dr.Dnyandeo D.Shinde, Professor, Department of Mechanical Engineering, SOET, Sandip University, Nashik

Abstract:--

In the present paper some technical investigation done by selecting important research articles related to research work to formulate the problem definition. With the increase in food demand day by day there is rapid growth in the food production which leads to the innovation and development of new techniques in Agriculture, Horticulture, Apiculture, Aquaculture, etc. The Aquaculture is one of the food supply system in the form of fish meal. With the increasing demand of fish meal, the aquaculture system also needs to be updated and hence there are different techniques and methods are developed for making aquaculture profitable. One of the developed techniques is Biofloc system which is used to cultures the fish with zero or minimal water exchange. The major requirement of Biofloc system is maintain the optimum DO level in water and to keep the floc medium in suspension with water movement, but most of the Biofloc based system fails due to lack of requirements. Hence in order to provide the optimum DO level with sufficient water circulation the aeration system design is proposed with three set of nozzles fitted with aeration pipe and the optimum design is selected for benefits in aquaculture.

Index Terms

Aquaculture, Biofloc Based System, DO Level, Floc, Water Movement.

Smart Helmet for Underground Mines with OTA

Dnyanesha Dhaytadak, Department of E&TC, Dr.D.Y.Pati School Of Engineering, (SPPU), Pune, India
Dr.S.M.Koli, Department of E&TC, Dr.D.Y.Pati School Of Engineering, (SPPU), Pune, India

Abstract:--

Mining industry is hazardous to work in. The life of miners is always at risk. There are many existing safety helmets but they could not work as intended because of the typical nature of mines structure and production discrepancy. The problem addressed in this project include hazardous gas, helmet removal and object fall which can sustained a life-threatening injury. A smart helmet monitors types of variables which are life threatening for workers like temperature, humidity, gas, etc. in underground mines. The unique and main feature of smart helmet is it will make the personnel aware about the situation of the surrounding environment present to the worker on 16x2 LCD. It will automatically generate alarm and will on light indicator if the parameters exceed the threshold value. Other responsibilities of this smart helmet to transmit the data sensed by the sensors to the control room timely using wireless connectivity so that the responsible person or the supervisor would be aware of the situation. This project is focused on miner's safety and the wireless data transmission between miner and control room.

Keywords

Miner's safety, OTA, Wireless sensor networks, wireless data transmit.

Hybrid Electric Vehicle

Dr. Shinde Dnyandeo Dattatraya, Department of Mechanical Engineering, SOET, Sandip University, Mahiravani, Trimbak Road, Nashik - 422013, India
Prajwal Yogesh Rudraksha, Department of Mechanical Engineering, SOET, Sandip University, Mahiravani, Trimbak Road, Nashik - 422013, India

Abstract:--

Automobile hybridization is considered as an important step in reducing greenhouse gases and related automotive emissions. However, current hybrid electric vehicles are a temporary solution on the way to zero emission road vehicles. This paper discusses the use of hybrid electric vehicle power train. This vehicle allows a control strategy which includes both fuel-economy and performance modes .Recently there has been a lot of interest in the concept of hybrid electric vehicles, which have great potential to attain higher fuel economy and efficiency.

How does a hybrid automobile work? What goes on under the hood to give you 20 or 30 more miles per gallon than the standard automobile? And does it pollute less just because it gets better gas mileage? This paper helps us to understand the technology behind these hybrid vehicles. A brief review of design considerations and selection of major components for hybrid electric vehicles is provided.

Keywords

Hybrid Vehicles, Energy Saving, Regenerative Braking, Eco Friendly

Design and Experimental Analysis of Tooth Impact Test Rig for Spur Gear

Akshay Shelke, M.Tech student, Design engineering, Sandip University, Nashik, Maharashtra, India
Prof. D. D. Shinde, Associate Professor, Mechanical Engineering, SOET, Sandip University, Nashik, Maharashtra, India
Prof. D. R. Satpute, Assistant Professor, Mechanical Engineering, SOET, Sandip University, Nashik, Maharashtra, India

Abstract:--

This project is about the design and analysis of a prototype of tooth impact test rig for spur gear. The test rig was fabricated and analysis was conducted to study its' limitation and capabilities. The design of the rig is analyzed to ensure that there will be no problem occurring during the test and reliable data can be obtained. From the result of the analysis, the maximum amount of load that can be applied, the factor of safety of the machine, the stresses on the test rig parts were determined. This is important in the design consideration of the test rig. The materials used for the fabrication of the test rig were also discussed and analyzed. Static analysis of spur gear will be perform using ANSYS 19 workbench. Modeling of test rig and spur gear will be design using CATIA V5R20 software. Based from the results, there were limitations found from the initial design and the test rig design needs to be improved in order for the test rig to operate properly. Experimental study using strain gage to determine the strain at the gear tooth can be conducted with the availability of this test rig.

ICETET-2021 **ISBN: 978-81- 951120- 3-6**

Organized by
Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
In Association with
Institute For Engineering Research and Publication (IFERP)

Higher Technical Education and Employment

Dr. Shinde Dnyandeo Dattatraya, Department of Mechanical Engineering, SOET, Sandip University, Mahiravani, Trimbak Road, Nashik - 422013, India
Mr. Darshan Baphana, Department of Mechanical Engineering, SOET, Sandip University, Mahiravani, Trimbak Road, Nashik - 422013, India

Abstract:--
The Indian education system has to be improved in today's globalised world. This paper focuses on the most recent literature on learning approaches. The goal is to examine the admissions and educational conditions in technical schools. The fishbone diagram technique is recommended for determining the underlying cause of failure, with students as one of the stakeholders involved. Possible solutions for improvement are provided after analysing the causes. A case study of engineering institutes in general is used to conduct a detailed investigation of student-staff issues.

Keywords
Mobile Learning, e-learning, ICT in education

Energy Audit of Boys Hostel (B-1) at Sandip Foundation, Nashik- A Case Study

H. R. Kulkarni, Associate Professor, SIEM, Nashik, India
H H Kulkarni, UG Student, Sandip Institute of Engineering and Management, Nashik, India
Abhijit Surve, UG Student, Sandip Institute of Engineering and Management, Nashik, India
Rahul Mahale, UG Student, Sandip Institute of Engineering and Management, Nashik, India
R.P. Rajput, UG Student, Sandip Institute of Engineering and Management, Nashik, India

Abstract:--

The electrical energy is used all over the world due to its huge applications. This makes maximum demand all over the world. India falls under the category of developing country. It has maximum electrical energy demand during peak hours, when compared to the generation of electrical energy it is not enough. Here we can say that our supply side management is not fulfilling the demand. At consumer level we have to develop awareness on saving of electrical energy as well as we must use electrical energy in efficient way. In this paper authors have audited electrical load of the boy's hostel, of an educational institute.

Keywords

Energy audit, Energy conservation, Energy management, Payback period.

Review of Design & Implementation of Filtering Antenna for Bandwidth Enhancement

Kiran Hilal Sonawane, R.C.Patil Institute of Technology, Shirpur
Prof. Dr. Pravin Sahebrao Patil, S.S.V.P.S.B.S.D.COEngg, Deopur, Dhule

Abstract:--

A demand is increasing for high performance communication systems. Microwave and millimeter-wave systems have to face electrical performance, weight, size , and cost mandatory. The combination of Antenna with filter called as filtering antenna becoming increasingly interesting. The recent trend is use of multifunctional module for both filtering and radiating functions simultaneously called filtering antenna. Such a system is a challenging task to design. Discuss the various filtering antenna in this letter, and analyze the performance of different parameters such as high antenna gain, selectivity, larger bandwidth and polarization. Different methodologies, challenges and problems are discussed in the design of the filtering antenna and the techniques used to improve the filtering antenna performance.

Index Terms

Filter-antenna configuration, monopole antenna, microstrip-transmission line, microwave filter.

Design and Static Analysis of Aluminium Honeycomb Structure for Helmet Shell by using FEA

Kiran V. Kadam, ME Design Student DPCOE
Maheshwer C, Assistant professor DPCOE
Sandaeep Kale, Assistant professor DPCOE

Abstract:--

In India numbers of road accidents are increasing as the number of vehicles are increasing on the roads. Around 25% to 30% of the total road accidents accounts for the motorcycle accidents. Total deaths of such motorcycle riders are mostly due to inappropriate safety measures adopted by the riders and one of which is not using helmets.

The human head is exposed to heavy impact loading against natural protection. In this work, investigation is done to improve strength and shock absorption capacity of helmet by replacing general helmet shell material with aluminum honeycomb structure.

Head injuries in motor vehicle crashes have high significance due to their fatal effects on the nervous system of passengers and pedestrians. In this project, using models of motorcyclist's helmet and the human head, two cases of head impact with a rigid surface are simulated by Finite Element Analysis; first, the impact of the head protected by the helmet and then, that of the unprotected head. In each simulation, impact parameters such as, mass center velocity of the head, and pressures produced in the brain are calculated and corresponding parameters are compared with each other, which quantitatively represents the influence of the helmet on reduction of injuries to the head.

Aluminum honeycomb sandwich construction has been recognized as a promising concept for structural design of light weight systems. A sandwich construction, which consists of two thin facing layers separated by a thick core, offers various advantages for design of weight critical structure.

Keywords:

Aluminum honeycomb, Helmet, Ansys.

Design and Static Analysis of Aluminum Honeycomb Structural for Helmet Shell by FEA

Kiran Vitthal Kadam, Savitribai Phule Pune University

Abstract:--

In India numbers of road accidents are increasing as the number of vehicles are increasing on the roads. Around 30% of the total road accidents accounts for the motorcycle accidents. Total deaths of such motorcycle riders are mostly due to inappropriate safety measures adopted by the riders and one of which is not using helmets. The human head is exposed to heavy impact loading against natural protection. In this work, investigation is done to improve strength and shock absorption capacity of helmet by replacing general helmet shell material with aluminum honeycomb structure. Head injuries in motor vehicle crashes have high significance due to their fatal effects on the nervous system of passengers and pedestrians. In this project, using models of motorcyclist's helmet and the human head, two cases of head impact with a rigid surface are simulated by Finite Element Analysis; first, the impact of the head protected by the helmet and then, that of the unprotected head. In each simulation, impact parameters such as, mass center velocity of the head, and pressures produced in the brain are calculated and corresponding parameters are compared with each other, which quantitatively represents the influence of the helmet on reduction of injuries to the head. Aluminum honeycomb sandwich construction has been recognized as a promising concept for structural design of light weight systems. A sandwich construction, which consists of two thin facing layers separated by a thick core, offers various advantages for design of weight critical structure.

To Study the Effect of Bio-Filter for the Treatment of Waste Water

Prof. Shantanu Pande, Prof. Civil Engg. Dept. Sandip Institute of Engineering And Management, Nashik
Manish Ingale, Under graduate student Civil Engg. Dept
Harshal Patil, Under graduate student Civil Engg. Dept
Virendrasing. Rajput, Under graduate student Civil Engg. Dept
Dikshant Bhoir, Under graduate student Civil Engg. Dept

Abstract:--

Wastewater is any water that has been adversely affected in quality by anthropogenic influence. It comprises liquid waste discharged by domestic residences, commercial properties, industry, and/or agriculture and can encompass a wide range of potential contaminants and concentrations. In the most common usage, it refers tothe municipal wastewater that contains a broad spectrum of contaminants resulting from the mixing of wastewaters from different sources. Wastewater also known as sewage originates from residential commercial and industrial area. Wastewater engineering is that branch of environmental engineering in which the basic principles of science and engineering are applied to solving the issues associated with the treatment and reuse of wastewater. The ultimate goal of wastewater treatment is the protection of public health in a manner commensurate with environmental. economic, social, and political concerns. In addition, untreated wastewater contains numerous pathogenic microorganisms that dwell in the human intestinal tract. Wastewater also contains nutrients, which can stimulate the growth of aquatic plants, and may contain toxic compounds or compounds that potentially may be mutagenic or carcinogenic. In this project coconut coir, maize, and sugarcane is used as a fixed bed for treating domestic wastewater and to know the comparative removal efficiency of pH, hardness, chloride, DO, total solid, alkalinity, Turbidity with conventional gravel bed in a small volume reactor, using these natural filter bed waste water is treated and it can be reused for various purpose like agriculture, plantation

Key words

Waste water, Sewage, Environment.

Study and Analysis of Single Point Cutting Tool

Samadhan K. Vidhate, Department of mechanical engineering, Sandip university,Nashik, Maharastra, India
Dr. Dnyandeo D. shinde, Department of mechanical engineering, Sandip university,Nashik, Maharastra, India
Dr. Dipak P. Patil, Department of Elctronics Engg., Sandip Institute of Engineering and Management, Nashik

Abstract:--

single point cutting tool are used to remove some material on workpieces. It is the tool that is used to production machines like lathe machine planner, machine, shaper machine and so on. Various operations are conduct by using single point cutting tool: turning planning and shaping. This paper is introducing the effects with its nomenclature while working a single point cutting tool, temperature effects, and wear effects, cutting forces acting on cutting tool. In experiment work create a geometry of tool in solid work or CAD software's. The model is import in ANSYS and meshing is done then the temperature reading and forces calculated in different depth of cut are given to the software. The software analyzed the model by finite element analysis at different forces and calculate different stress are develop on the tip of the tool. In finite element analysis on single point cutting tool maximum stress are developed tip of the tool is the main cause of failure also deformation take place at tip of the tool it the cause of failure.

Keywords

single point cutting tool, materials, causes of failure(tool life), effects, cutting forces, finite element analysis (ANSYS).

Review of Design & Implementation of Filtering Antenna for Bandwidth Enhancement

Kiran Hilal Sonawane, R.C.Patil Institute of Technology, Shirpur
Prof. Dr. Pravin Sahebrao Patil, S.S.V.P.S.B.S.D.COEngg, Deopur, Dhule

Abstract:--

A demand is increasing for high performance communication systems. Microwave and millimeter-wave systems have to face electrical performance, weight, size , and cost mandatory. The combination of Antenna with filter called as filtering antenna becoming increasingly interesting. The recent trend is use of multifunctional module for both filtering and radiating functions simultaneously called filtering antenna. Such a system is a challenging task to design. Discuss the various filtering antenna in this letter, and analyze the performance of different parameters such as high antenna gain, selectivity, larger bandwidth and polarization. Different methodologies, challenges and problems are discussed in the design of the filtering antenna and the techniques used to improve the filtering antenna performance.

Index Terms

Filter-antenna configuration, monopole antenna, microstrip-transmission line, microwave filter.

Compressed Air Vehicle

Pramod Ambadas Karole, Professor, SITRC, Nashik, Maharastra, India
Ankit Kumar, Assistant professor, Mechanical Department, SIEM, Nashik, Maharastra, India
Om Bagade, Scholar, Mechanical Department, SIEM, Nashik, Maharastra, India.
Shubham Sawant, Scholar, Mechanical Department, SIEM, Nashik, Maharastra, India.
Harsh Hire, Scholar, Mechanical Department, SIEM, Nashik, Maharastra, India.

Abstract:--

This work presents details technological development of compressed air energy system.. Emission free compressed air powered energy system can be used as the main power source or power unit in vehicle transportation with advantages of zero carbon emission and improved the overall energy efficiency of the integrated energy system. MDI is one company that holds the international patents for the compressed air operated car. Although it seems to be an environmental friendly solution. The electricity requirement for compressing air has to be considered while computing overall efficiency. Nevertheless, the compressed air vehicle will contribute to reducing urban air pollution in the long run.

ICETET-2021 **ISBN: 978-81- 951120- 3-6**

Organized by
Department of Mechanical Engineering, Sandip Institute of Engineering and Management, Nashik
In Association with
Institute For Engineering Research and Publication (IFERP)

A Review on Optimization of Machining parameters of nickel alloy using pvd, cvd coated carbid

Prof. Prasad Kulkarni, Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik
Parmod karole, Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik
Shahnawaz A. shaikh, Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik
Ahire subodh K., Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik
Vaidya atul, Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik
Jadhav kunal, Mechanical Engg. Dept. Sandip Institute of Engg.And Mangement, Nashik

Abstract:--

Nickel Alloy (INCONEL718) type of 'Super alloy'. Mainly this alloy is used in the critical application such aerospace, defense, petrochemical. Inconel 718 is characterized by having superb tensile, fatigue, creep and rupture strength at temperatures up to 1290 °F (980 °C). Machining of the superalloy Inconel718 would have some issue like, inability of the tool materials to sustain for a longer duration due to thew work hardening effect and very high cutting forces causes metallurgical damage on the work piece. Turning experiments on the INCONEL718 were investigated under the different cutting conditions using three controllable parameters namely feed rate, cutting sped and depth of cut. This report focuses on the turning experiments performed on the INCONEL 718 and gather those observations research papers and case studies. Turning experiments have been performed according to an orthogonal array L16 with the three parameters (cutting tool, feed rate, cutting speed) at different levels with a 1 mm depth of cut. The ideal cutting tools and cutting parameter were evaluated in terms of the surface roughness (Ra) Thus, to reduce the cost of the product and the effects of many different parameters. DOE (design Of Experiment) it's the user friendly and easy to understand method also known as "Taguchi Approach" or "Taguchi Standardized version of DOE". The turning operations carried on the Superalloy may reduce the tools life or break the carbide cutting tool. The harden cutting tool are used for turning operations on the INCONEL718. Coated cutting tools such as Physical Vapor Deposition (PVD), Chemical Vapor Deposition (CVD). With the help of the available research, and continuous development and requirement the turning parameters such as the cutting speed, depth of cut, feed rate is taken as the input parameters. With the end results for the energy efficiency and surface roughness.

Key word:-

Nickel alloy, Input parameters (speed, feed, depth of cut), Output parameters (energy efficiency, surface roughness).

Experimental Investigation of Machining Parameter of Iconel-718 for Green Manufacturing

Prasad P. Kulkarni, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg. And Management, Nashik
Prof. Pramod Karole, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg. And Management, Nashik
Satyam Singh, Under Graduate Student Mechanical Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Aditya Raskar, Under Graduate Student Mechanical Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Zaki Shaikh, Under Graduate Student Mechanical Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik
Monish Lalani, Under Graduate Student Mechanical Engg. Dept, Sandip Institute of Engg.And Mangement,Nashik

Abstract:--

Extensive researchers have conducted several experiments in the past for selecting the optimum parameters in machining nickel based alloy – Inconel 718. These experiments conducted so far are dealt with dry machining and flooded coolant machining of nickel alloy Inconel 718. In this research study, the usage of refrigerated coolant is also dealt with and it is compared with dry machining and flooded coolant machining. Cutting speed, feed and depth of cut are considered as the machining parameters. The effectiveness of the refrigerated coolant in machining the heat resistant super alloy material Inconel 718 with respect to these machining parameters are described in this article. The machinability studies parameters were generated with surface roughness and flank wear. The performance of uncoated carbide cutting tool was investigated at various cutting condition under dry, flooded coolant and refrigerated coolant machining. The relationship between the machining parameters and the performance measures were established and using analysis of variance significant machining parameters determined. This article made an attempt to Taguchi optimization technique to study the machinability performances of Inconel 718. Taguchi approach is an efficient and effective experimental method in which a response variable can be optimized, given various control and noise factors, using fewer experiments than a factorial design. Taguchi's optimization analysis indicates that the factors level, its significance to influence the surface roughness and flank wear for the machining processes. Confirmation tests were conducted at an optimal condition to make a comparison between the experimental results foreseen from the mentioned correlations. The main objective of proposed work is to determine the influence of controllable parameters on machining characteristics of Inconel-718 and to achieve the optimum parameters for sustainable and efficient turning.

Key word

Nickel alloy Inconel 718, Machining processes, Optimization technique, Super alloy material Inconel 718.

Development of a Novel Approach for Brain Tumor Detection and Feature Extraction using BWT and SVM Classifier

Preeti Arora, Research Scholar, Deptt. of Electronics and Communication Engg., MVN University Palwal, Haryana, India
Dr. Rajeev Ratan, Professor, Deptt. of Computer Science Engg., MVN University Palwal, Haryana, India

Abstract:--

In today's world, the automatic detection and extraction of brain tumor from Magnetic Resonance Images (MRI) images is main concern and also a time consuming task by medical experts. Different techniques have already been proposed regarding this context. In this article, the Berkeley Wavelet Transform (BWT) technique has been proposed to detect the tumor & Support Vector Machine (SVM) classifier is used for classification of tumor. Different features have been extracted to enhance the SVM accuracy and quality rate. The experimental results of the proposed technique have been assessed by different parameters. With the help of the proposed technique achieved accuracy is 98.2%, specificity is 94.2% & sensitivity is 97.72%. The achieved result proved the importance concerning quality parameters and accuracy in comparison to already exiting techniques. From results, it is obvious that that the technique presented in this article may help in the accurate and handy diagnosis of brain tumor with its precise location.

Keywords-

Magnetic Resonance Imaging (MRI), Pre-processing, feature extraction, Morphological operation, Berkeley Wavelet Transform (BWT), Support Vector Machine (SVM) classifier

Design of Automatic Hand Sanitizer with Temperature Sensing

Ashwini Patil, Dept. of Electronics & Telecommunication Engineeringm, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India
Shivani Patil, Dept. of Electronics & Telecommunication Engineeringm, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India
Joyce Pathare, Dept. of Electronics & Telecommunication Engineeringm, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India
Amit Kumar Mishra, Assistant Professor, Dept. of Electronics & Telecommunication Engineering, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India
Dipak P Patil, Professor, Dept. of Electronics & Telecommunication Engineering, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India
Yogesh Risodkar, Assistant Professor, Dept. of Electronics & Telecommunication Engineering, Sandip Foundation's , Sandip Institute Of Enggineering & Management, Nashik, India

Abstract:--

Viruses such as COVID-19 are transferrable through touch and contact. There are WHO guidelines to clean or sanitize hands regularly to reduce the risk of infection. Dispensing of sanitizer from bottle and storage would require manual intervention. The design depicted shows the preventive measure that can be taken during the COVID-19 pandemic in the whole world. Sanitizers have become the most significant commodities right now. By the new rules and regulations given by WHO vigorous sanitization is needed to survive. The design gave the solution for the problem stated. The design introduces an automatic hand sanitizer and temperature sensing system, to keep the hand sanitized whenever a person wants to do it, without a contact with the sanitizing machine. The temperature sensor on touching gives the body temperature of the person.

Keywords

Automatic hand sanitizer, Arduino, temperature sensor, PIR sensors, TMP36, covid-19.

A Critical Analysis of Compensation Management's Impact on Employee Retention of Large scale industries in Nasik

Prof. Sarika Patil, Sandip Institute of Technology Research Centre, Nashik
Dr. Sanjay D. Khairnar, Sandip Institute of Technology Research Centre, Nashik

Abstract:--

The author of this research paper intends to investigate the impact of compensation systems on employee retention. The study focused on respondents' perceptions of the compensation system, as well as staff retention, as a result of the remuneration framework's impact on employee retention. Analysts utilized polls as technique for information assortment and examination instrument. An arbitrary examining strategy has been utilized to discover the populace test size of 70 employees of the referred to foundations. Measurable proof uncovered that there is a huge positive relationship demonstrating that Compensation framework impacts employee's fascination and maintenance. The findings revealed that there are positive and notable links between the remuneration structure and employee retention.. In this investigation, a few suggestions were additionally attracted organizations' administrators and specialists proposed regions of additional explores.

Key words:

Compensation System, Employee Satisfaction, Employee Retention

P67 Steer Axle Drop Test

Shrikant Hanmant Kumbhar, Savitribai Phule Pune University

Abstract:--

The steer axle is vital part of forklift truck. Steer Axle Generally Located at rear of forklift truck. The moto of steer axle drop is Validate the capability of steer axle assemblies to withstand impacts from inadvertent drops of the rear of the truck. The objective of this project is correlate physical drop test results with drop test in simulation software. For Hyster-Yale group arrow cast company supplying steer axle casting from over the years & provided steer axles are working good. Mahindra company approaches us for providing steer axle. We had performed physical drop test on steer axle & steer axle casting broke down. We want to simulate drop with Mahindra material properties & arrow material properties; we want to capture this failure in software.

This failure will capture in ANSYS workbench software, with ANSYS explicit module of ANSYS.

Autonomous Rover System

Sonia T. Bhadane, computer engineering, ndmvp kbt coe nashik
Janhavi P. Thakare, computer engineering, ndmvp kbt coe nashik
Devyani N. Kankariya, computer engineering, ndmvp kbt coe nashik

Abstract:--

Rover is an advanced open-source autopilot for guiding ground vehicles and boats. It can run fully autonomous missions that are define using mission planner software or pre-recorded by the driver during a manual run. While it is possible to build a vehicle with rover from scratch. we highly recommend starting from an existing RC-vehicle (this comes with a frame and power supply). You will need to add the autopilot, GPS and possibly some other hardware. Most importantly you will need to obtain an RC transmitter that has spare channels needed for autopilot mode control and learning. The journal is aimed at the growing trend in robotics towards mobility, intelligence and autonomy in an unstructured world. The mobility may make use of wheels, legs, fins, or other actuators. The focus is on the ability to move and be self-sufficient, not on whether the system is an imitation of biology. The main objective of our project is to build wireless rover for industrial application with live video streaming. Autonomous Robots have the ability to gain information about their environments and work for an extended period of time without human intervention.

Keywords

Aero FC, Ardupilot firm wave, ROS, rover

Improvement in COP Using Different Energy Source

Ankit Kumar, Scholar, SRK university, Bhopal
Dr. Manoj Kumar chopra, Professor & Principal SRK university, Bhopal

Abstract:--
In the world circumstance the most disturbing issue is constantly get together with energy. We are defying a broad lack of energy and for that it will continually valuable to limit the energy use. So for that this work contain a preliminary procedure by which we can see how much energy we can save by applying three particular energy focal point for developing a ventilating system. While in three fuel source one is normal fuel source and another two is nontraditional fuel source.
The conventional fuel source is associated with essential fume pressure cycle and non-standard fuel source is associated with concentrate energy from peltier effect and earth heat exchanger. This work in like manner contains a significant piece of warmth pipe which is used to move energy from on demonstrate other.
This work moreover contains the pressing factor of energy usage with three special conditions which are:
1. When just fume pressure cycle is used.
2. When fume pressure cycle is used with earth heat exchanger.
3. When fume pressure cycle is used with earth heat exchanger and likewise peltier module.

Keywords
Vapor Compression Cycle, Peltier module, Air- conditioner, Earth heat exchanger, Thermal Analysis, Heat pipe.

Improvemnt in COP with Combination of Vapour Compression Cycle & Vapour Absorption Cycle

Ankit Kumar, Scholar, SRK university, Bhopal
Dr. Manoj Kumar chopra, Professor & Principal SRK university, Bhopal

Abstract:--
The most concern thing on the planet in current decade is the solid wellspring of Energy. As the question of time it is presently an ideal opportunity to move toward non-customary wellspring of energy. The significant energy among non-customary energy is created by sunlight-based energy. In this survey paper we examined on the part where we create energy exhaustive nearby planetary group and after that we use that energy to beat the part load on Hybrid cooling. This is done to run the framework on part of the way on sun oriented and lay on power. In this entire interaction the test is to keep up with the refrigerating impact with at the same time minimization of power utilization. The part of coefficient of execution of framework is extremely basic in light of the fact that as the time elapsed Coefficient of execution is first decline and afterward increment so the test is to keep up with it. This audit paper additionally elaborates the work done in this field of Refrigeration and Air molding.

Keywords
Refrigeration and Air molding, close planetary system, Hybrid cooling, Nonconventional

Implementation of Smart KYC Validation System using CNN based Real Time Face Recognition in Prohibited Premises

Gayatri Phade, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Minal Patil, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Omkar Vaidya, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune
Sanjay Gandhe, Department of Electronics and Telecommunication Engineering, Sandip Institute of Technology and Research Centre, Nashik, Savitribai Phule Pune University, Pune

Abstract:--

Visitors monitoring and identification in multi-stored building apartments and high rise apartments having population of more than 200 people is a ticklish issue. In such a crowded residence, many visitors are visiting, every now and then for multiple reasons. In most of the Apartment complexes, manual visitor management system is in place. In existing visitor management system it revealed many limitations such as security, accuracy, trustworthiness, time consuming pre-registration by book entry, inefficient monitoring, cross checking for the visiting purpose etc. The e-KYC based visitor identification is the solution for these problems. In this paper, multi biometric based e-KYC system is proposed for identification of the visitors visiting the high rise apartments. This biometrics are captured with camera and matched with KYC linked with Aadhaar database. Correct match will validate the identity of the visitor and his visit date and time will be recorded in the database. The proposed system is developed using a camera, ARM processor and display unit to display visitor's KYC. To develop software for the system, Thonny Python with multi CNN and Facenet is used to process the KYC validity through face image processing. The experimental result showed the successful identification of the visitor after validating person's KYC documents linked to their respective biometrics.

Keywords

Face Recognition System, KYC Validation, MTCNN, Triplet Loss.

Design of Internal Material Handling System to Improve Work Flow in Food Industry

Sachin Chede, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Rahul Ahire, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Rakesh Kunde, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Jyotsna Suryawanshi, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.
Pravin Bedre, Department of Mechanical Engineering, Sandip Institute of Engineering & Management, Nashik, Maharashtra, India.

Abstract:--
In majority of small-scale food industries material handling is done manually due to high capital required for an advanced material handling system. The need based material handling is designed and fabricated to improve the internal work flow by reducing manpower and prevent damaging of packaged food products. This paper describes a design and application of cleated belt conveyor system which works satisfactorily to handle packaged food products of 280 kg per hour from one floor to another. The system reduces manpower by 75% and increases productivity by 40 % as compared to existing material handling system. The volumetric and mass capacity of system is 0.36 m3/hr and 280 kg/hr. It is reliable, compact, saved working man-hours and increased profitability of small units engaged in material handling..

Keywords
Internal work flow, Inverted cleated conveyor belt.

Automatic Job Loading and Unloading on CNC Lathe Macine

Prof.C.R.Patil, Mechanical Dept., Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Deepak Jagtap, Mechanical Dept., Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Bhavesh Nunse, Mechanical Dept., Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Akshay Jundare, Mechanical Dept., Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik
Dhiraj Mahajan, Mechanical Dept., Sandip Institute of Engineering & Mangament,Sandip Foundation Nashik

Abstract:--

Industries in the recent days concentrating on computer numerical control (CNC) machineries for mass production by replacing convectional ways to improves productivity and quality however recently machine tool manufactures are coming with solution including automatic loading and unloading to reduces fatigue of labour and reduces cycle time and increasing productivity. The automation of machine tool resulted higher cost of machinery, hence medium scale company are difficult to upgrade. In this project we have introduce a low costing solution for the automation of loading and unloading for dedicated component with dedicated CNC turning centre. The project title "Automation Loading and Unloading of Job on the CNC Lathe Machine" this project involves the use of automation using pneumatic system to reduces numbers operator and increases efficiency. Development of automatic loading and unloading method with pneumatic arrangement in the manufacturing of nozzle pin resulted in increasing operation cycle time, efficiency, production quality and labour cost, as well as the use of additional machine and labour can be minimizing since single operator can handle two machines. Hence, we can achieve the higher production at lower labour cost.

Design and Analysis of Single Grider EOT

Prof.prakash Sutar, Assistant Professor, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Pranav Shinde, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Deepak shewale, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Mangesh Bhore, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik
Shailesh Kundhare, Undergraduate Student, Department of Mechanical Engineering, Sandip Inst of Engineering and Management, Nashik

Abstract:--

We design a single grider EOT crane as industrial purpose. single grider EOT crane is one of the most necessary material handling equipment for major industries. But in recent years less attention has been thrown towards changes in design of Heavy single grider EOT Crane Bridges Since, Grider cranes are critical material handling equipment, manufacturers takes less attention towards the changes in design for safety and security purpose. But, now the cost of structural steels continuously increasing, optimization of design is necessary. Single EOT crane manufacturers are required to give better cost effective products to industry users. The objective of this paper is to design and analyze the 10-15 ton of capacity single grider EOT crane with welded box section of Girder. The design is made by altering the dimensions of crane girder sections and also the position of crab on the Girder by keeping other parameters constant. This approach includes comparison of the existing analytical results with analysis software. The Main focus of the work is to modify the EOT single grinder gantry crane on the basis on given conditions Simultaneously, an improved design should provide more safe design. we have taken into consideration Shear Stress.

study is depend on Company requirement for material handling equipment
1 company give dimensions and some basic parameters to us
2.On the basis of this parameter we calculate design follow standard process
3.final Design reading we put for model or prototype designing.

Future and usability of Electric bike

Ankit Kumar Mishra, Assistant Professor, Mechanical Department, Siem, Nashik, Maharashtra, India
Pramod Ambadas Karole, Professor, Mechanical Department, Sitrc, Nashik, Maharashtra, India
Purva Phad, Scholer, Mechanical Department, Siem, Nashik, Maharashtra, India
Hitesh Deore, Scholer, Mechanical Department, Siem, Nashik, Maharashtra, India
Vipul Girase, Scholer, Mechanical Department, Siem, Nashik, Maharashtra, India
Pravin Gopal, Scholer, Mechanical Department, Siem, Nashik, Maharashtra, India

Abstract:--

The primary objective of this project is to analyse and find the flaws in the electric motorcycle market in India and to provide feasible solutions to it by understanding the customers perspective. India is a growing automotive market and it is now moving towards the EV market, but still people are afraid of buying electric motorcycles due to various reasons. This report is to provide detailed analysis of the market of electric motorcycles and to present the customer's side about what they expect from the electric Vehicles. The main aim of the study is to explore the requirements at the customers end for the startups to provide optimum required specifications of the vehicles to achieve customer satisfaction which will eventually result in enhancement and expansion of the EV market in India. This can be achieved by the combined efforts of the government and private sector.

Keywords :

Electric Motorcycle, EV Market

A Review on Experimental Investigation of Machining Parameter for Tool Wear and Tool Life of Titanium Alloy (Ti6AL4V) By Using NOX Coolant

Prof. S. B. Ambekar, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg. and Mangement ,Nashik
Dr. S. S. Pawar, Associate Professor of Mechanical Engineering in RKDF Institute of Science & Technology, Bhopal, Madhya Pradesh
Digambar Gawande, Under Graduate Student Mechanical Engg. Dept
Sameer Thete, Under Graduate Student Mechanical Engg. Dept
Vishal Bodke, Under Graduate Student Mechanical Engg. Dept
Ganesh Bhagat, Under Graduate Student Mechanical Engg. Dept

Abstract:--

Titanium Alloy is a highly specific strength material, having excellent mechanical characteristics such as high stiffness, fracture resistance, and hardness at high temperature, so it is applied to various fields such as automotive, aerospace and bio-industry. The productivity and the quality of the machining products are the main important challenges of metal cutting or in production industry during turning processes. Due to which manufacturing industries are competing in the market field. This study represents optimization parameters such as cutting speed, depth of the cutting feed rate in the machining material and carbide tool. The design of experiment based on the Response Surface Methodology is performed to identify the effect of cutting parameters on the different response variables.

Keywords :

Titanium Alloy, Quality of the machining, Optimization parameter, Tool life.

A Review on Optimization of Machining Parameters for Surface Roughness of Titanium Alloy (Ti-6Al-4V) for Turning Operation by Using NOx Coolant

Prof. S. B. Ambekar, Assistant Prof. Mechanical Engg. Dept. Sandip Institute of Engg. and Mangement ,Nashik
Dr. S. S. Pawar, Associate Professor of Mechanical Engineering in RKDF Institute of Science & Technology, Bhopal, Madhya Pradesh
Vinod Mule, Under Graduate Student Mechanical Engg. Dept
Kunal Chaudhari, Under Graduate Student Mechanical Engg. Dept
Shubham Vaidhkar, Under Graduate Student Mechanical Engg. Dept
Rahul More, Under Graduate Student Mechanical Engg. Dept

Abstract:--

Titanium Alloy is a highly specific strength material, having excellent mechanical characteristics such as high stiffness, fracture resistance, and hardness at high temperature, so it is applied to various fields such as automotive, aerospace and bio-industry. The productivity and the quality of the machining products are the main important challenges of metal cutting or in production industry during turning processes. Due to which manufacturing industries are competing in the market field. This review article summarize about optimization parameters such as cutting speed, depth of the cut and feed rate in the machining material and carbide tool.

Keywords :

Titanium Alloy, Turning Operation, Optimization Parameter, Surface Roughness , NOx Coolant

Development of Pipe Inspection Robot

Shelke Gajanan N, Professor, Mechanical Engineering, SIEM, Nashik
Jain Gaurav, BE Mech.Students, SIEM, Nashik
Tayade Chetan, BE Mech.Students, SIEM, Nashik
Nandy Anchit, BE Mech.Students, SIEM, Nashik
Shekokare Dhiraj, BE Mech.Students, SIEM, Nashik

Abstract:--

In present work Pipe inspection robot is developed and simulated for an autonomous in-pipe inspection. The mechanism used involves a central rod upon which a translational element is fitted which is in turn connected to three links of the three frames and wheels. DC motors are attached to the wheels to achieve the required drive. The mechanism can accommodate in small pipe diameters also. An electronic circuit consisting of three relay switches is used to control the entire circuitry of DC motors, camera and translational element. The camera is mounted on the top of the assembly, which itself can be rotated and thus giving a wide field of view for inspection inside the pipe. The robot allows for detection of cracks, buckle, corrosions, pitting and many others. In the present paper development and simulation of the present set up is explained which is proposed for the actual manufacturing of Pipe Inspection Robot.

Keywords :

DC motor, Defects, In-pipe inspection, Links, Robot.

Optimization of Machining Parameter of Nickel Alloy for Green Productivity

Prof Prasad P. Kulkarni, Assistant Professor at Sandip Institute of Engg & Management, Nashik
Prof. Pramod Karole, Students at Sandip Institute of Engg & Management, Nashik
Vamshi Mamidi, Students at Sandip Institute of Engg & Management, Nashik
Prachit Taralkar, Students at Sandip Institute of Engg & Management, Nashik
Ashish Mohapatra, Students at Sandip Institute of Engg & Management, Nashik
Tushar Dahare, Students at Sandip Institute of Engg & Management, Nashik

Abstract:--

Machining of Iron-based Nickel super alloy material with existing method creates many difficulties like fast tool wear, large cutting force, and high surface roughness on the machined components. Various types of coolants were used to study the surface texture, tool wear, and chip morphology in turning of Iron-based Nickel A286 alloy. The machinability index for surface roughness and tool wear appreciably increased by minimum quantity cooling and lubrication (MCQL) (Seyed et al., 2018) method as compared to other methods. This result also discovered that the rake face of the cutting tool is affected by the built-up edge.

Keywords :

Nickel Alloy,Inconel-718,Built –up edges

Design & Development of Magnetic Mobility Scooter

Kunal.U. Shinde, Assistant Professor, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India
Harshal Nerpagar, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Prashant Abhale, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Raghav Karivadekar, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.
Saurabh Gunjal, Under Graduate, Mechanical Engineering Department, Sandip Institute of Engineering & Management, Nashik, India.

Abstract:--
The scooter Contains magnets so that conductivity is made possible due to repulsion it floats and moves forward or backward as per the direction of applied force. Basic concept can be applied for further future transportations also to reduce real time problems such as vehicle traffic fuel problems, emission problems etc. Major applications fall in the fields of medical and self-transportation and also for material handling. These Concepts of magnet scooter will help in future to make amazing transportation.

Keywords :
Repulsion, Magnet, Transportation, Material Handling.

IFERP International Conference
IFERP Explore
https://icetet.net/ | info@icetet.net

UPCOMING CONFERENCES

Technoarete® Group
Integrating Researchers to Incubate Innovation

SUPPORTED BY

ALL CONFERENCE ALERT
Academics conferences at a glance

ECA
Get World wide Engineering Conferences Update..

Conference Alerts
Global Academic Conferences

INTERNATIONAL CONFERENCE ALERTS

ISBN : 978-81- 951120- 3-6