Second International Conference On
Communication And Information Processing
26 - 27 JUNE, 2020

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ICCIP 2020

Organized By

NUTAN MAHARASHTRA VIDYA PRASARAK MANDAL'S (NMVPM'S)

NUTAN COLLEGE OF ENGINEERING & RESEARCH (NCER)

TALEGAON DABHADE, PUNE - 410507, INDIA
Under Management Support of Pimpri Chinchwad Education Trust (PCET)
Approved By AICTE- New Delhi, Government of Maharashtra and DTE Mumbai
Affiliated To Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere

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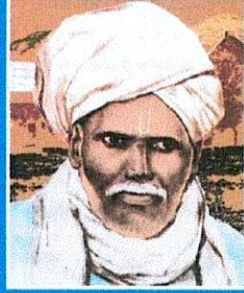Office Phone : 02114-228175 E-mail :contact@ncerpune.com

Our Inspiration

Lokmanya Bal Gangadhar Tilak

Annasaheb Vijapurkar

Engineering Education through Modern Pedagogical Approach

NUTAN MAHARASHTRA VIDYA PRASARAK MANDAL's (NMVPM's)

NUTAN COLLEGE OF ENGINEERING & RESEARCH (NCER)

Under Management Support of Pimpri Chinchwad Education Trust (PCET)

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NCER has been awarded with "Best Skill Based Engineering Institute in Maharashtra, 2019" at 7th Global Education Excellence Awards
AND NMVPM trust had been awarded with "Best Industry Interface Institute in Maharashtra, 2018" at 6th Global Education Excellence Awards.
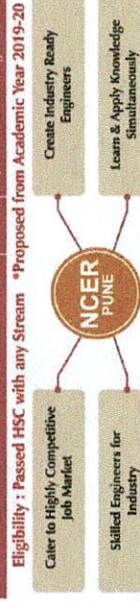
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Located in the Industrial Hub of Pune
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No.	Course Name	DTE Code	Intake	Specialization
01	Computer Science and Engg.	6419242410	120	Cloud Computing, Big Data, Artificial Intelligence, Machine Learning
02	Electronics & Communication Engg. (Sandwich)	641957610	60	Embedded System, VLSI, Robotics, IoT Engg.
03	Mechanical Engg. (Sandwich)	641952510	120	Mechatronics, Product Design, CAD, CAM
04	Automobile Engg.	6419602210	60	Design Drafting, Electric Vehicle Technology, Product Design

Eligibility : Passed HSC with Physics and Maths with Chem/Bio/Biotech/Voc. @ 50% for Open & 45% for Reserve.

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(NSQF Level - 7, 3 Years Graduation Program)

	100 (25 each)
1) Graphics & Multimedia	
2) Electronics Manufacturing Services	
3) Industrial Tool Manufacturing	
4) Automobile Servicing	

Eligibility : Passed HSC with any Stream   *Proposed from Academic Year 2019-20

- Cater to Highly Competitive Job Market
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- Create Industry Ready Engineers
- Learn & Apply Knowledge Simultaneously

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- 250+ PATENTS IN 4 YEARS
- 210+ COPYRIGHTS IN 1 YEAR
- 43,500+ ALUMNI
- 2,500+ RESEARCH PAPERS IN 5 YEARS
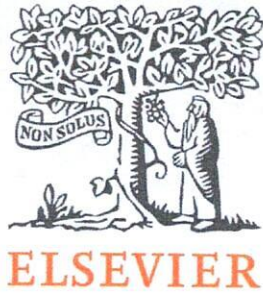- 14,500+ STUDENTS ON CAMPUS EVERY YEAR

Glimpses of NCER

+ 1st Skill based Engineering College in Pune with 100% Job Guarantee
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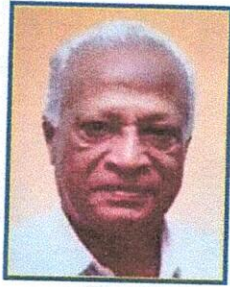
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ICCIP 2020

Second International conference on Communication and Information Processing

26 - 27 June, 2020

General Chair
Dr. Girish Desai

Program Chair
Dr. Lalitkumar Wadhwa
Prof. Aparna Pande

NUTAN COLLEGE OF
ENGINEERING AND RESEARCH
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Dr. S. B.Deosarkar

Professor and Officiating Registrar

It gives me an immense pleasure to know that the Second International Conference on Communication and Information Processing (ICCIP- 2020) is organized by Nutan College of Engineering & Research, Pune (Maharashtra)-India from 26th to 27th June 2020 under the aegis of Dr.Babasaheb Ambedkar Technological University, Maharashtra.

With the advent of new technologies in the field of Engineering and Management, it is necessary to bring all the scholars at one place to exchange varied methodologies in the discipline.

I am sure, this conference will benefit to the academicians, researchers, scientist, and policy makers of Engineering and Management. Further to it ICCIP 2020 undoubtedly provide the platform to showcase and recognize the outstanding research capabilities of the young researchers.

I express my sincere gratitude to the various Experts and Keynote speakers and Technical Program Committee for their erudite expertise. I must take this opportunity to congratulate the delegates and participants for their significant contribution at ICCIP - 2020.

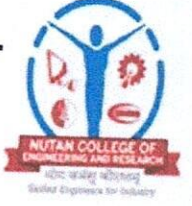I wish ICCIP - 2020 a Great Success!

Dr. S. B.Deosarkar

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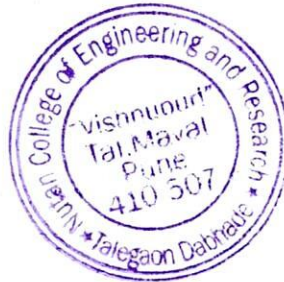
Date: 22/6/2020

Principal's Message

It gives me immense pleasure to announce that the "2nd International Conference on Communication and Information Processing (ICCIP-2020)" is organized by Nutan College of Engineering and Research (NCER), Pune from 26th to 27th June 2020.

NCER-started in 2018, is an industry and skill based engineering college which offers B.Tech. degree in Engineering and Bachelor of vocational degree (B.VOC). NCER provides practical & industry based learning and has MoU with 140+ industries.

This conference will provide a forum to academic researchers, practicing engineers and industry experts to present and discuss their recent work, technical advancement and new products. The thrust of the conference is to initiate a global discussion on the next generation technologies to ease the life of mankind, irrespective of their social and economical status. I am sure; this conference will benefit all the attendees. I express my gratitude to various experts and key note speakers for their scholarly expertise.

I am also grateful towards delegates and participants for their significant contribution in research papers. I am indeed thankful to the management of Nutan Maharashtra Vidya Prasarak Mandal (NMVPM), Pimpri Chinchwad Education Trust (PCET) and Dr. Babasaheb Ambedkar Technological University (DBATU, Lonere) for giving the opportunity to organize the international conference. I wish, the conference a great success.

Dr. Lalitkumar Wadhwa
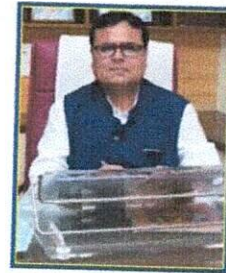
Principal

The Conference

General Chair

Dr. Girish Desai

Conference Chair

Dr. Lalitkumar Wadhwa

Principal

TPC Coordinator

Dr. Brijesh Iyer

Dr. BATU, Lonere

Conference Chair

Prof. Mrs. Aparna Pande

NCER, Pune

Preface

Dear Distinguished Delegates and Guests
Second International Conference on Communication and Information Processing (ICCIP-2020)" is organized by Nutan College of Engineering and Research (NCER), Pune from 26th to 27th June 2020.

We take this opportunity to express our deep gratitude to the speakers of keynotes and invited talks for accepting our request to share their words of wisdom. We also thank the reviewers and session chairs for their support. Let us thank the authors and delegates for their contributions and presence.

We are extremely grateful to Hon. Shri. Krishnarao Bhegade, Shri. Sanjay Bhegade, Shri. Santosh Khandge, Shri. Rajesh Mhaske, Shri Ramdas Kakade for their patronage and support from time to time.
Thanks are due to the administrative staff of the University for their Support. Finally, we have no words to thank all our colleagues, members of various committees, all the student volunteers, and research scholars without whose unflagging enthusiasm and delight efforts, this conference would not have seen the light of day.

We pledged to take this conference series to the greater heights in the years to come with the aim to put forward the need based research and innovation.
Thank you one and all.

Dr. Lalitkumar Wadhwa
Prof. Aparna Pande

International Conference on Communication and Information Processing (ICCIP) 2020

Nutan College of Engineering & Research, Talegoan, Pune, Maharashtra 26 June 2020 – 27 June 2020

The Schedule

Day & Date	Time	Event
Day 1 26th June 2020	9:00 AM to 10:00 AM	Arrival of Guest & Breakfast
	10:00 AM to 10:30 AM	Inauguration of ICCIP 2020
	10:30 AM to 12:30 PM	Plenary Talk by Guest of honor speech by
	12:30 PM to 1:30 PM	Lunch
	2:00 PM to 5:00PM	Skype Three parallel Paper presentation sessions
Day & Date	**Time**	**Event**
Day 2 27th June 2020	9:00 AM to 11:00 AM	Skype Three parallel Paper presentation sessions
	11:00 AM to 12:00 PM	Welcome and Key note speaker Mr. Shivanand Mohan (Zoom)
	12:05 AM to 1:00 PM	Welcome and Keynote speech by speaker Dr. Harish Tiwari (Zoom)
	1:05 PM to 1:50 PM	Lunch
	2:00 PM to 5:00PM	Skype presentation session & Continuation of three parallel paper presentation sessions

ICCIP 2020

All Track Contributed Papers

Rohanish Rover Robotic Arm and Image Processing

Snehal Koparde, Omkar Chavan, Meghashayam Joshiand Sushrut Bodke

This paper presents the design and development of robotic arm with computer vision and machine learning algorithms to recognize and perform task over the object. The project comprises of two modules one is the Robotic arm and the other one is Mast camera. This Project proposes a Real time Image Processing based of Robotic Arm Control Standalone System utilizing Microprocessor. In the current time we made a robot equipped for observation and surveillance further more with a substitute application in distinguishing and following a pre-specified object. The detection and recognition is done using Open CV library of Image Processing in python. While all the processing is done on raspberry pi which works on Raspbian OS based on debian-Linux OS. The functioning of robotic arm and mast camera operations are carried out without any manual control.

Smart Waste Bin

Akshay Mahendrakar, Nilima Kulkarni, Omkar Molak, Shivam Kumar, Piyush Chitnis

The waste management process includes steps from waste collection to its final disposal. Waste management is required to avoid adverse effects of the waste on human beings. When dry and wet waste mixed, it breakdowns into landfills and creates some dangerous greenhouse gases. Thus, segregation of waste is an important process under waste management. Segregating waste helps to turn away it from landfill ensuring it's recycled properly. Mixed dry waste like glass and paper can be turned into new different products. This prevents the energy and resources needed to create different products from raw material. If waste not segregated and disposed of properly it results in huge damage to the environment. This work proposes a smart waste bin for household applications. Arduino UNO, Arduino Nano, servo motors, and batteries are used for implementation.

A Wideband Pentagonal Patch Antenna with Rectangular Slots for Wireless Applications

In this research paper, a pentagonal patch antenna has been designed on the 1.6 mm thick FR4 substrate material with dielectric constant of 4.4 and size of 66 x 55 mm2. To achieve the wideband characteristics, the rectangular slots are introduced along the 4 sides of the pentagon and the partial ground plane is used of size 20 x 55 mm2. The antenna is designed and simulated in the CADFEKO software using line feed technique. The proposed antenna has a impedance bandwidth of 1.875 GHz with 3 resonant frequencies 1.7 GHz, 2.74 GHz & 3.259 GHz. The maximum gain for the proposed antenna is 8 dBi, reflection coefficient less than -10 dB and VSWR values are in standard range. The proposed antenna design can be used for Digital Communication System (DCS 1800), Personal Communication System (PCS 1900), Wireless Broadband (WiBro 2300), Long Term Evolution (LTE 2300, LTE 2500), Bluetooth, Wireless Local Area

Network (WLAN IEEE 802.1 b/g), Radio Frequency Identification (RFID), Worldwide Interoperability for Microwave Access (WiMAX) and Industrial Scientific Medical (ISM 2.4) applications.

Image Processing Based Signature Duplication and its Verification

Mitesh Parmar ,Nupur Puranik, Dhruva Joshi, Sonal Malpani

Currently a lot of time is needed for the verification of signature manually. The need of developing an automated checking system is felt because of signature forgery in various transactions. The dynamic signature is a biometric trait which is used in identification. Automatic signature verification is an application of Image Processing. The aim of the model is identifying correct signature for reducing fraudulent transactions. It is difficult to have multiple signatures of the same person so the idea is to duplicate a given signature number of times by inducing variations and using verifiers to give a similarity. For duplication of signature the approach of using the Cognitive Inspired Model is used. The approach for creating human like signatures can be done by introducing Intra-Component and Inter-Component variability. For verification, Structural Similarity Index (SSIM) and Image Hashing techniques are used.

Medchain-Medical Record Securance Using Blockchain

Sajith S R, Rimo Binoy, Sreejith P Nair, Reenu Anna Philip

MedChain uses blockchain technology to create a network of blocks for storing user-focused electronic health record while conserving only one true version of the user's data. MedChain permits healthcare professionals access to the users data if the user deems it. MedChain then archives collaborations with this data in an ascertainable, transparent and protected way on MedChain's distributed ledger. The project shows how blockchain technology is used and how MedChain is utilising it to address specific issues to make healthcare better for users. MedChain can be a platform for other applications to build on that can complement and improve the user experience. Users will be able to clout their medical data to power a surplus of applications and services.Our mission is to place the patient at the centre of the digital transformation of healthcare so that their data will always be secure and under supervision.

Diagnosis of Chronic Disease: A review

Madhavi Sahare, Nilima Kulkarni

Disease in India is growing day by day, in which chronic diseases are life threatening and life harming diseases. This may affect the body adversely and diagnosis of these can help in detecting the disease. The two growing chronic diseases are diabetes and cancer. Diagnosis of these diseases is very important so that appropriate medication and treatment would be possible for it and on time. The aim of this paper is to study recent techniques used for the diagnosis of chronic disorder, and to give an idea of this domain to researcher. This report gives complete information about different techniques used for the diagnosis of the disease.

A Study on Multi-view Video Summarization Techniques

Joyeeta Pal, Ishita Sharma, Anil Singh Parihar

With the recent developments in multimedia and their applications in day-to-day life, the summarization of video content is a growing and popular field. The main objective of video summarization is to abstract the important events, or objects from a video to provide an easily interpretable summary. The video-surveillance is a crucial security mechanism of many public and private places like hospitals, universities, banks, etc. These videos provide important information about any intruder or invaders. Although this information is of

critical importance, but it takes a lot of time and effort to go through hours of long videos in order to find out the significant events. Here, multi-view video summarization comes to rescue as it extracts the most useful events out of the videos and presents it to the user. The multi-view video summarization system provides an advantage over single view video summarization system by exploiting the complicated intra-view and inter-view correlations, thereby presenting an effective summary of multiple camera views and enriching the video content.

Diabetic Retinopathy Stage Classification

Rahul Bajaj, Nilima Kulkarni, Suyash Garg

Diabetic Retinopathy is the disease of the retina caused by long-standing diabetes leading to damage of the retina and can even lead to blindness. Diabetic Retinopathy stage classification deals with different stages of diabetes and has been considered as the most important step in the analysis of the disease. Diagnosis of the disease manually requires skilled individuals to identify distinct features, which is a difficult and time-consuming task. In this paper, a deep learning-based CNN model for diagnosing is presented. Digital colour fundus images are used. In this work, we have implemented an InceptionV3 model with an attention mechanism. The motive behind using attention mechanism was that the model should pay more attention to the relevant portion of the image. This work will enable a user to test their eyes and can be easily identified in which stage of diabetes they are suffering. All the images were divided into five groups. In the proposed work, the CNN model (InceptionV3) was trained for producing a model for predicting on validation samples. Categorical accuracy of 60.82% is achieved with a Top 2 accuracy of 82.16.

Emotion Detection using Facial Expressions

Shivani Patil, Gaurav Deore, Anuj Taley, Suraj Sawant, Amit Joshi

Humans express their emotions in various ways like body language, speech, facial expressions, etc. We have used facial expressions to detect emotions which are very crucial and have wide applications in machine learning, especially in medical, communication, education and entertainment fields. Old age health monitoring, Security systems, Psychology and computer vision, Driver fatigue monitoring are few real world applications of emotion detection. This system aims to recognize seven emotions namely Anger, Sad, Happiness, Surprise, Neutral, Surprise and Disgust. Our system proposes Emotion detection of humans using facial expressions with Convolutional Neural Network (CNN). Literature review is carried out to select best deep learning model. Dominant algorithm applied is CNN. The data-set used is Fer2013 and JAFFE.

Smart Traffic Control System Based on Neural Network

Gauri Sonawane, Pooja Kote,Sajidullah Khan

This paper presents a smart traffic light control technique based on neural system NN as hypothesis for intersection. In the first place, the quantity of taking a break of one vehicle inside green light time frame are estimated in the fundamental line and sub-line of a choose intersection. At that point, the estimated information's are received to develop an estimation strategy dependent on NN for perceiving the traffic stream of a standard intersection. Some exploratory outcomes are made to check the viability of the proposed acute traffic stream control strategy. The demonstrative outcomes show that the proposed evaluate strategy can segregate the traffic stream of a standard intersection quickly and precisely. Also consist multi agent mechanism and decision-making using hybrid NN .Through hybrid neural network 80% result can be achieved

Adaptive Load Scheduling For Residential Load Using Time Shifting and Power Shifting

Trupti Sude, Pradumn Suryawanshi, Shravan Jadhav, Snehal Bhaladhare

The purpose of the scheduling system is to minimize the peak hourly load to achieve an optimal daily load schedule. It is scheduling for residential load in smart grid using PWM technique. We are able to schedule both the optimal time & optimal power for time shiftable appliances & power shiftable appliances by using this technique. It uses smart meter which displays & monitors the home appliances &provide two way communication by consumer and distribution system. These system works according to the power consumption patterns of all the individual appliances. Objective of proposed system is to demonstrate the effectiveness of the technique to implement this design and valid it for multiple household & also incorporate future enhancement. It minimizes the energy wastage to control shiftable component at home.

Myo-electric Prosthetic Hand

Pranali Pagde, Sunita Bharande, Mandar Kolapkar, Namrata Dhawas

In the world where there are so many real-life problems for those undergone limb loss ,it is necessary to work for it .The main aim of this project was to research, analyze and execute the design required for a myoelectric prosthetic hand .The current commercial prosthetics for upper limb are mostly open loop devices .Several problems arise from the use of such open loop devices due to its working capabilities. In this project ways of improving the prosthetic devices is shown The problems involving these prosthetic devices are tackled in this report.

RF Energy Harvesting using Efficient Power Management System

Rohit Mane, Bhushan Batule, Nikita Lomte, Aniket D. Gundecha

The paper presents an RF energy harvesting system consisting of a Microstrip antenna, matching circuit, voltage multiplier circuit followed by robust control algorithms for DC-DC signal processing. Here the antenna is fabricated only for the 1800 MHz of the GSM band. The output of the antenna is about 0.3mV at matching circuit output and amplified output for the 5.256V at the output of the voltage multiplier circuit is achieved. Further the control algorithms help in achieving the optimum maintained output of the entire system.

Fire Fighting Robot

Miss Rasika Sohani, Miss.Shruti Somoshi,Miss Vaishnavi Tayade, Miss. Amruta Kapse

Fire assumes a significant job in the human life however alongside that it is hazardous too. Fire occurrence is a catastrophe that can cause the loss of human life, property harm and lasting incapacity to the influenced casualty. Firemen are principally entrusted to deal with the fire occurrence, yet regularly they presented to the higher dangers when quenching fire particularly

in dangerous condition, for example, in atomic force plant, oil treatment facilities and gas tanks. Additionally they confronted with different troubles especially when the fire happens in tight and limited region, as it is important to investigate the vestiges of structures and obstructions to smothering fire and spare the person in question. Thus this paper presents the advancement of putting out fires Robot utilizing embedded system that can quench the fire without the requirement for firemen. This Putting out fires Robot furnished with the Fire sensor to identify the fire, Smoke Sensor and temperature sensor to recognize the temperature in encompassing zones and we controlling the movement with the assistance of Bluetooth model and robot is customized to distinguish the fire. So here we are attempting to give the specialized answer for previously mentioned issue.

Design and Development of ECG signal abnormalities via Structural designing of LabVIEWTechnique

Arti R. Wadhekar, Vandana B. Malode

The significance intention of this research work is to design a structure for predicting ECG signal abnormalities. This proposed model incorporates three section pre-processing, feature extraction and structural designing. The novelty of this work lies in structural designing done with Biomedical Toolkit to improve its prediction accuracy. The structural design happens with the aid of optimization techniques to precise its predicting accuracy. The preliminary research carried out with benchmark dataset to design and validate the designed optimal structure. The developed system does the preliminary investigation and predicts the heart abnormalities of a person. Hence anyone skeptic of heart problemcan analyse his/her ECG using this efficient technique. The entire implementation execute in the working platform LabVIEW (Laboratory Virtual Instrument Engineering Workbench) to process the system to ECG signal abnormalities prediction.

Applications of Artificial Neural Networks in E-Learning Personalization

Ritika Khandelwala, Umesh Kumar Gupta

Artificial learning is playing a very important role in supporting emerging and existing technologies present around us. In the areas of learning and tutoring from a person to a researcher it plays key role in the field of knowledge due to its advancement. The adaptive e-learning is providing personalized and advanced learning system to the learners. Why this is important? This is because it facilitates the capacity of a person which provides more accuracy in reading and understanding in more detail. To find the most appropriate personalized learning material for a learner is difficult on the net. Artificial Intelligence based E-Learning is a platform that possess ability to perform different tasks which requires human intelligence. It helps in analyzing and creating different solutions to human-related problems, speech recognition, software problems.

Holography: CGH a new approach towards internet of 2030

AprajitaShriwastawa and Dr. Satyajee Srivastava

In this growing era of new generation and well-developed technologies the human mind is willing to develop something new every day, something more innovative to make our life simpler. The requirement of better and clear output has been increased

tremendously. One of those developments started with the development of the Stereo-photographs, after which 3-D or 3D images came in the picture, now the development is taking place in computer holography or holographic communication. This paper will explore the evolution of 3D imaging and the basic physics involved in photographic film generation. The interconnection of holography with 5G and the Internet of things. The rising of pre era of 5G systems and the later requirement towards the future of the communication system is described. A brief idea about the market and trends of digital holography and teleportation.

Blockchain: Its importance in healthcare, education, agriculture

Ankita Rastogia and Dr. Satyajee Srivastava

Blockchain is the core of the data protection and security. Every other individual over the internet cannot be trusted and maintaining a hard copy of the data in this digital age needed a solution. Here blockchain came in picture when people started to ask about the robust structure of the data protection. It gives us the platform for the users to save the data in the form of blocks. In this paper we will discuss about the brief introduction of the blockchain and the roles it requires to carry on the whole process of data authentication and chaining. We will also discuss about the market strategy and demands of the blockchain in various countries along with a flow diagram of the transaction and record generation. Later we will talk about Blockchain applications in the three major sectors Agriculture, Education and healthcare. Along with all the advantages and disadvantages we will finally summarize the paper with the future aspects and suggested work to carry forward.

Design and Implementation of Smart Blind Stick

Shubham Bele, Swapnil Ghule, Akshay Gunjal, N.D. Anwat

Independence is the building methodology in achieving dreams, goals and objectives in life. Visually impaired persons find themselves challenging to go out independently. There are millions of visually impaired or blind people in this world who are always in need of helping hands. For many years the white cane became a well-known attribute to blind person's navigation and later efforts have been made to improve the cane by adding remote sensor. Blind people have big problem when they walk on the street or stairs using white cane, but they have sharp haptic sensitivity. The electronic walking stick will help the blind person by providing more convenient means of life. The main aim of this paper is to contribute our knowledge and services to the people of blind and disable society.

Profound Learning Approach for Shot Boundary Location

Dattatraya Jadhav, Yogeshkumar Sharma, Parul Arora

Distinguishing shot boundaries and Gradual shot change happens to be critical research area in the field of video retrieval, summarization and segmentation. Identification of Video shot boundaries is generally a significant and first step for ordering, retrieval, video segmentation and event based video analysis and numerous other such aspects. There has been extraordinary research to improve the accuracy of SBD calculations. An advance research on this work is reported towards interpretable highlights of edges. In this paper, we projected an identification of video shot structure dependent on Convolutional Neural Systems (CNNs).

Portable fuel cell system emulator as a Hardware-in-Loop setup

Sujit Sopan Barhatea, Rohini Mudhalwadkar

PEM (Proton exchange membrane) fuel cell is an electrochemical device that generates electricity along with heat and water as by products. Hence, it is a clean source of energy for stationary as well as automotive applications. The fuel cell is being researched and experimented for its applications, durability and efficiency. An experimental setup needs expensive fuel cell or stack, measuring instruments, programmable load, reactant gas cylinders, humidifier and heater. Use of hydrogen in laboratory needs safety compliance. Hence, it adds difficulty in making experimental setups. Moreover, conducting experiments with various membrane sizes, reactant pressure, stack sizes, power densities, fault conditions simulation is difficult with real fuel cell setup. This paper proposes a portable fuel cell system emulator for experimentation and fault testing. The emulator is designed using a Renesas microcontroller RL78. Fuel cell is emulated by a model developed using MATLAB®/Simulink®.

PLC Based Automatic Control of Overhead Trolley Crane for Industrial Application

Kalpana Waghmare, Kalyani Tapkire, Dnyaneshwari Garad, Santosh Gadekar

This paper portrays the PLC Based Automatic Control of Overhead Trolley Cranes for Industrial Application. In a conventional mechanical crane control framework, all control gadgets are wired legitimately to one another. The activity of overhead voyaging crane is totally constrained by utilizing Programmable Logic Controller (PLC) utilized for mechanization of certifiable procedures. For example, control of apparatus on production line sequential construction systems. The framework arrangement of activity is planned by stepping stool outline and PLC programming. Automatic operation provides less man power and the overall production can be increased. At last, for productive activity, an acceptance engine with DC in modern applications. This paper Programmable Logic Controller (PLC) based automation system is used to control the crane movements.

Intelligent Street Light Services Based on LoRa

Anurodh More, Soumya Mishra, Mandar R. Nalavade

In today's generation, the Internet of things introduces a new set of services that can be implemented on the mobile network operator and offered to the end user. In local and wide area network, Wi-Fi or cellular communication is used but it consumes more battery power. Therefore, Long Range (LoRa), an emerging wireless technology developed by Semtech, has gained a lot of attention with the multitude of IoT applications which uses very less power, making it ideal for battery operated devices. It examines for long range communication performance in a large area. This study contemplates the prospect of implementing services of the "Smart City" concept. Increase in population and the corresponding growth of numerous roads has extended the number of street lights. These street lights consume sufficient amount of energy.

Smart Data Glasses For Multimeter

Anup Deshmukh,,Akshay Chavan, Rohit Marathe, Prof. Pooja Shinde

Smart glasses demonstrated to be one of the advanced processing gadgets that unit the people and machines. As of late, it is seen that smart glasses have been utilized in the medical and gaming applications. Nonetheless, the highlights of smart glasses can contribute its administrations in different fields as well. In this paper, a study is carried out to investigate the conceivable use of smart glasses in estimating readings inside a live electrical board, the thing that are inconvenient, and even risky on occasion, is turning away from your hands to peruse your multi meter.

Drowsiness Detection and Warning System Using Python

Pratiksha Kolpea, Pratibha Kadamb, Usama Mashayakc

Now-a-days, road accidents have become one of the major issue. The major road accidents are caused due to drowsiness, drunken and rash driving. This is the reason, every year the number of road accidents is increasing especially by cars. Due to drowsiness, drivers become less active while driving. This paper represents to build a system for Drowsiness detection and Warning for automobile safety and accident prevention. We are using eye detection, drowsiness detection and eye blinking pattern detection with the help of machine vision-based concepts. In order to detect fatigue or drowsiness, web-camera has been used which points directly towards the driver's face and detects the eye movement of the driver.

IOT Based Water Quality Monitoring System

Mr. Konde Santosh Tryembakrao, Dr. S.B. Deosarkar

Since the water pollution is increasing globally so implementation of water quality monitoring is effective and efficient with increasing in the development of wireless sensor network (WSN) technology in the internet of things (IOT) environment. Water quality monitoring is remotely monitoring by real time data acquisition, transmission and processing. This paper present reconfigurable sensor interface device for monitoring water quality system with IOT environment for the developing smart water quality monitoring system (SWQM). We are using field programmable array (FPGA) design board, sensors, zigbee base wireless communication module and personal computer.

IOT Based Vehicle Accident Prevention System.

B.H.Pansambal

Conventional smart vehicles have performance limitations leads to the small road and obstacle detection range of the installed sensors. In this study, to overcome this limitation, we proposed the usability of a new conceptual autonomous emergency braking (AEB) system that uses Car-to-Car (C2C) communication technology in the existing AEB system. In this a radar sensor and a driving and communication environment constituting the AEB system were simulated; the simulation was then linked by applying vehicle dynamics and control logic. The simulation results show that the collision avoidance relaxation rate of car-to-car communication-based AEB system was reduced compared with that of existing vehicle-mounted-sensor-based system. Thus, a method that can lower the collision risk of the existing AEB system, which uses only a sensor cluster installed on the vehicle, is realized.

Application of VFD for Three Phase Induction Motor

Sourabh Bodkea, Darshan Patilb, Rupesh Salgarc, N N Ghuged

This paper is about various application of Variable frequency drive(VFD) on three phase induction motor.In this we carryout different on load and no load test on three phase induction motor.Variable Frequency Drive (VFD) is an electronics device which is use to change utility power source to variable frequency. Variable Frequency Drive (VFD) can be used to control the speed of three-phase induction motor. The load of an Induction Motor is not constant it varies according as per the load requirement. So, speed must be changed as per increasing or decreasing the load. The main aim of the project is to control speed of a three-phase induction motor with energy saving.

Privacy Preserving Security VANET Framework for Intelligent Transport Systems

Keerthana NK, Kurunandan Jain, Tarun Kumar Bansal

The importance and applications of Intelligent Transportation System's (ITS) has increased over the last few years. It is well known that ITS helps in the efficient regulation and control over high volume traffic utilizing various communication modes and networks such as VANETs (Vehicular Ad-hoc Network). With help of a robust VANET, transport infrastructure units could exchange critical information to generate traffic conditions to help smooth functioning traffic flow. Of course, to allow exchanging of various critical information, the privacy and security of the information is an important aspect. One of the most effective and popular choice for privacy protection is pseudonym-identifier

Smart Refrigerator

Utkarsh Kore, Parth Akre, Usama A. Mashayak

Some portion of what makes getting in shape so troublesome is that checking calories is a vague science at best.

Eating food without knowledge of its composition and nutritional contents prompts poor processing leading to poor health. Each time you convey nourishment from the device it indeed, even with nutritious data, one needs to screen serving sizes, people are continually searching for approaches to enhance their health and wellbeing. The typical procedure of getting nutritional data is by utilizing google or utilizing some applications. In this paper, we have proposed a system which is portable, handy, needs less space and power, fast, is more proficient and simpler.

Solar Based Smart Wheelchair with Stretcher Mechanism

Mayur Waghe, Baliram Shinde, Omkar Sawant, Krishnakant Kasar

Basically wheelchair is mechanically controlled device which is used for handicapped and aged person for mobility. Now a days as compare to world, in India the number of disabled people increasing day by day. For the disabled and aged people, mobility wheelchairs are used for the transportation from one place to another, especially indoor and outdoor condition facing problems of walking. Different types of wheelchair have been developed in past years such as manual wheelchair, Battery charged electric wheelchair. Manual wheelchairs are having limitations for highly disabled people. In case of battery operated wheelchair, the cost of the wheelchair is more due to its controller and electric charging. This will also increase load on generation utility. So the aim of our project is to build low cost solar based smart wheelchair with stretcher mechanism. Solar based charging unable increase in the travel range up to 26% as compare to battery powered Electric wheelchair. The stretcher mechanism facilitate to use same wheelchair as stretcher also. Overall the system will be effective and appropriate for aged, handicapped people.

Microcontroller based thermoelectric cooling for electric vehicle battery charging application

Mayank Doshi, Suyash Udawant, Datta Devkule, Prof. Santosh Gadekar

Microcontroller based thermoelectric cooling is presented in this paper. The developed prototype uses thermoelectric cooling and forced air cooling for battery thermal management system. The liquid coolant methods have some adverse effect on battery life and electric functionality of overall charging system. There may be possibility of liquid coolant getting in contact with the battery during the heat extraction operation. Heat is removed the condenser side of the thermoelectric liquid casing using motor operated fan. The entire cooling operation is automatic as it involves arduino microcontroller for switching of thermoelectric cell. LCD display enables the data acquisition for future developments. The fast and accurate switching is possible using arduino microcontroller. The test result presents that a cooling is taken place with a reasonable amount heat extraction from the container.

Automatic Room lights Control by Using Arduino and IR

Kunturwar Vrushabh, Shinde Atul ,Pokharkar Ashwinic, ArpitaShroff

It can be used to turn ON and OFF the lighting system of home automatically by detecting the presence of human. This system can be used in garages, classrooms, staircases, bathrooms, etc. where there is no need of continuous light but only when there is a human. Also, there is no need to worry about electricity bills as the lights get OFF when there is no human and hence one need to pay the bills as per use. The main components used in this system are Arduino Uno, PIR and Relay Module. Out of these components, the operation of system mainly depends on PIR sensor which helps in detecting human presence.

Analysis of 1KW Solar Rooftop System by Using Pvsyst

Sourabh Dalal, Vankatesh Jadhav, Rohit Raut, Mr Swapnil Narkhede

The act of a photovoltaic system depends on the geographical location and type of PV modules implemented. PV systems are beneficial in areas having moral amount of incident solar radiation. Pune gets an annual average solar radiation of about 5.4 kWh/m2 a day. In this paper 1KW photovoltaic system is designed and simulated using PVSyst software for Pune, Maharashtra, India using measured data of the location. The total amount of energy generated by the system and various losses occurring in the system are analysed and presented Performance ratio of the system over the whole year is estimated as which shows that generation of electricity from the PV system is a variable option for Pune to supplement the increasing energy needs.

Smart Charging of Electric Vehicle

Jadhav Akshada ,Ghorpade Ganesh, Kanthikar Nayan, Nitesh Anwat

Transportation through electrical battery-powered cars can facilitate to decreasing fuel expenses and cut back greenhouse gas emissions. Electrified transportation requires a large kind of charging networks to be established during an eco-friendly atmosphere. Wireless electrical battery-powered vehicle charging systems is an identical different technology to charge the electrical cars with none plug-in problems. This paper specifies the strategies of Wireless Charging of Electrical Vehicles (WCEV's). The WCEV is taken into account one amongst rising transportation systems during which the EV's battery is charged through Wireless Power Transfer (WPT) generation. Similarly to in providing an automobile with the specified electricity to recharge the battery of electric vehicle (EV) system has several kinds the most important of them is a wireless charging system that transmits power from transmitter to receiver with none contact.

Finger Print Based Attendance System Using Arduino
Prasad Kulkarni, Yash Patil, Amol Dagade, Amruta Kapse

At the instant, most of the attendance systems that are getting used in universities still are written a bit of paper. For classes, tutorial and laboratory session the students still have got to sign the signature on the attendance sheet. This method isn't flexible because the danger of losing the attendance data is extremely high. If the attendance sheet is missing, the attendance data are going to be lost. aside from that, unethical problem could also be occurring like cheating in signature. for instance, a student doesn't attend his class but his attendance form has been signed by another student. This technique is proposed to beat these problems. Besides that, since the proposed system also record the time, the lecturer can monitor the punctuality of the students too. "SMART ATTENDANCE SYSTEM" may be a system which will take an attendance by using information

extracted from the fingerprint Database Handling System. Before this lecturer must use the paper to urge the student's attendance. There have been tons of problems when using the paper as student attendance like cheating. This system can help lecturer to scale back the matter like that intentionally automatic attendance using fingerprint.

Designing of Gas Leakage Detection and Preventive System

TejasZambare, JayeshNehete, SnehaYerule, P. U. Shinde

Home Fires have incurred significant damage in lives and property as of late. LPG is exceptionally inflammable and can consume even at some good ways from the wellspring of spillage. Most fire mishaps are caused due to a low quality elastic cylinder or when the controller isn't killed. The stock of gas from the controller to the burner is on significantly after the controller is turned off. Coincidentally, if the knob is turned on it brings to gas spills. This paper deals with the recognition, observing and control arrangement of LPG spillage. Utilizing servo motor the cylinder knob is naturally controlled.

Solar Powered Sprayer with Automatic Single Axis Tracking Applications

Amol Ingle, Dipak Ingle, Akshra Huge, Babita Nanda

The impact of renewable energy sources brings the design of user-friendly equipment to make a pollution-free environment. The novel method is to implement a solar-powered sprayer with a single-axis tracking system that changes the direction of a solar panel to get maximum output from a solar cell. It presents a dependable and reasonable strategy for collecting the maximum efficiency of solar energy. The anti-clogging factor helps the operator for trouble-free operation as well as the longer life span of the nozzle. The power can be used for mobile charging, a led bulb which makes it more economical. It consists of a solar panel of 10W capacity, a 12V DC battery, charged by solar energy received by the solar panel, a DC motor, operated by the battery, a pump, to spray the pesticide and a tank to hold the pesticide.

Relative Studies of Improved Speed Performance of BLDC Motors Using Conventional PI and Fuzzy-PI Controllers

Amrita Patil, Gayatri Palnitkar, Utkarsh Alset

Brushless Direct Current Motors (BLDC) motors are available for large-scale use and commercially diverse industrial implementation, seeking faster and more efficient control. Proportional-integral (PI) controllers, like traditional controllers, perform better in pre-defined or user-defined motion bands. However, to achieve better performance for applications at wide speeds, they must be re-tuned at each speed change. Therefore, it is inconvenient or in most cases it is not possible to re-tune the PI controller parameters in each setup to get the correct response from the BLDC motor drive for the entire speed range. Fuzzy-logic based PI controllers can efficiently tune these PI parameters for each phase change of command speed and improve the speed response

of electric drives. This paper discusses the implementation plan for the speed control of the BLDC motors using the expensive ATMEGA328P-PU controller, the prosaic PI, and the Fuzzy Logic-Based-PU Controller. In this paper, simulation and hardware results that validate the effectiveness of the control scheme are presented.

Automatic Solar Panel Cleaning System

Nagesh Maindad, Akshay Gadhave, Suraj Satpute,Babita Nanda

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This paper is about the cleaning of a solar panel. In rural areas most of the solar street lights are used. After the installation of solar street light it only works for two to three months. Because, that panels are installed at height near about 15 to 20 feet, at this hight cleaning is not possible by using ladder. If solar panel is not cleaned regularly, then the dust in environment accumulates on the surface of the solar panel. This dust converts into a thick sticky layer due to morning dewdrops. Due to this dust solar panels not gives a sufficient charging current that required for the charging of a battery. if the battery is not fully charged, then it does not gives desired output and we have to replace that battery.

Internet of Things based Integrated Smart Home Automation System

Uma Pujari,Prasenjeet Patil, Nilesh Bahadure, Manvita Asnodkar

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Users often need to control and monitor activities inside the home remotely, for elderly parents, children, or pets. This paper presents a multifunctional, low-cost, and flexible system for smart home monitoring and control. The system is based on node-MCU ESP32 with Internet connectivity that allows remote device control. The system transmits sensor data to the Firebase database and can receive commands from the server, allowing automatic control. The android-based mobile app is designed for communication with the Firebase database and updating its values to monitor and control the various home appliances. For the demonstration of the feasibility of the system, various sensors like temperature, humidity, light, LPG (MQ-6), and motion sensors were integrated into a prototype of the home automation system. For the authentication and validation of the proposed system, the performance of the system is studied rigorously and is also evaluated.

A Statistical Frame Work to Identify Type and Level of Image Distortion

Poreddy Ajay Kumar reddy[a], Ch.Srinivasa Rao[b]

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Growth and usage of digital images have been tremendous in recent years as they are the source for representing and communicating information. Various algorithms are developed to improve the performance of an image, when it is subjected to distortions viz., acquisition, transmission, compression. It is highly undesirable to evaluate the quality score or quantitative index based on Human Visual System (HVS) in practical systems. A large number of restoration algorithms are available to

enhance quality. So, a quality metric needs to be deployed to determine which algorithm automatically predicts the quality score of an image based on the availability of reference(original) image and without availability, and it should provide the best results. Blind Image Quality Assessment (BIQA) aims to identify the distortion level and type blindly without prior knowledge about the reference image. Contrast features convey most of the skeletal information about an image.

Optimum Location and Size of DG Using GA with Sensitivity Analysis for a Real Time Radial Distribution System

SatishMarkad and ArchanaThosar

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Distributed Generation (DG) must be of appropriate size and location for getting the benefits in distribution system. Most of the renewable generation is directly grid to a distribution substation to fulfill the load demand; this may not give techno-economic benefit to the utility. A radial distribution system is identified where the wind generation DG is connected at substation bus to fulfill the load requirements. From study, it is observed that the system does not have any effect on loss as well as voltage profile with inclusion of DG. This paper discusses technique to reduce active and reactive power losses in an existing radial distribution system with wind generation connected to grid.

A low cost automation for MFI analyzer by using Arduino.

Venkatesh Shendge, Deepak Borade, Monika Padkodne, Swapnil Narkhede

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The melt flow index analyzer is a machine used in many plastics, toys making, goods manufacturing and also in Automobile industries. Because todays 30-40% components of any device is made by plastic, therefore the use of machine is to decide the quality and grading of the plastic which is to be used for different purposes. As in electrical engineering there is class A, class B, Class F, class Y etc. types of grading of insulators, similarly plastics have different types of grading. Now suppose we have to make dashboard of vehicle and a drinking water bottle by plastic. So the same material cannot be used for making dashboard and bottle. The material used for making dashboard should be tough, strong and should enough robust. But material used for bottle should be light in weight, soft etc.

A High Performance Blockchain Platform for Indian Banking System

Pragya Mehrotra, Nikita Bagrecha, Rishabh Sharma, Ishaq Polishwala

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Blockchain technology has gained significant attention after the introduction of bitcoin in 2008. It is a decentralized ledger useful in exchanging digital currency. Blockchain is a continuous growing list of records known as blocks managed by a peer to peer distributed network. The records in the blocks of blockchain are immutable and permanent which is well needed in the bank transactions. Blockchain technology is a peer-to-peer distributed structure which could be used to overcome the issues in the traditional banking system. This paper will demonstrate how we can use blockchain in the banking sector so that the burden of the centralized database is transferred to a decentralized network. It will also demonstrate the different algorithms that are used for the system like RSA and Verhoeff algorithm to generate the keys and to verify the user respectively.

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Analysis of Fingerprint Recognition System Using Neural Network

Ganesh Awasthi, Dr. H.S. Fadewar, Dr.Almas Siddiqui, Bharatratna P. Gaikwad

Fingerprint identification has a substantial efficacy in forensic science and aids criminal investigations. Fingerprints are distinctive and remain enduring throughout a person's life. The automatic fingerprint recognition systems are based on ridges and its characteristics known as minutiae. Hence it is extremely important to mark these minutiae accurately and reject the false ones. In this work we have used ridge termination and ridge bifurcation as minutiae for fingerprint recognition system. At the time of analysis of algorithms the approaches of attributes impart better results. The recognition rate is increased & the error rate is diminish with the aid of this technique. The most important step here in automatic fingerprint matching is to securely extract the minutiae from the captured fingerprint binary images. There are already a variety of techniques are available for extracting fingerprint minutiae.

Pothole Detection using CNN and AlexNet

G. Srinidhi and Renuka Devi S M

Repairing of roads is one of the challenge for avoiding accidents, heavy traffic and limiting the maintenance cost. Due to bad environmental conditions and heavy usage of roads potholes are formed. Present procedures used for detection of potholes generally is manual, so more time consuming. This paper is on detection of potholes using two approaches, i.e., Spectral Clustering (SC) and deep learning techniques. In first approach, the input image is processed by SC and morphological operations. Pothole is detected using threshold classifier. This methodology does not need any training phase for detecting the potholes. The second approach of detecting potholes is by CNN and AlexNet.

Arduino Based Smart Helmet for Coal Mine Safety

Suraj C.Godse, Pradeep C.Sawant,Varad J.Thigale,Krishnakant B. Kasar

From the start of human's need of energy coal mining has gained enormous importance and also hatred for the less protection for the miners. Explosions in mines are generally because of availability of gases like Methane. Underground mining perils incorporate suffocation, gas harming, rooftop breakdown and gas blasts. Remembering every one of these angles we planned a framework, i.e. smart helmet using Arduino technology for monitoring the hazardous gases, abnormal temperature conditions and therefore the humidity levels within the air. The improved safety features in our system dramatically increased anticipation of the coal miners by alerting them about the hazards. In our system, the helmet has the circuit with four sensors i.e. Temperature, humidity, gas and oxygen level to watch the conditions in coal pit.

J-Tex (The Shopping App)

Aleena Mariam Gem, Arya Ashok, Anupriya S, Annapoorna PA, Tibin Thomas

In this present-day nation, for most people shopping has become a day-to-day practice. This has lessened the time for shopping because of the busy lifestyle that was adopted. Our mobile application is developed using android as well as a server-side module which acts as the core database server for connecting customers to shop owners. The customer can now search the available clothes at the shop while residing across different regions. It is also an overall gain for the shop as well as it takes less time consumption for purchasing. Our app makes business to customer process smooth and easy. From this project, customers will be highly beneficial as it is very customer-friendly and is less consumption of time. This bring around a wide number of customers together for satisfying their needs just in a click.

A Comparative Study of Linear Regression and Regression Tree

PratibhaJadhav,VaishaliPatil and Sharad Gore

In data mining, prediction modeling is a technique that used for finding a mathematical correlation between a dependent variable and various independent variables or predictor variables. Generally, the linear regression describes the correlation between multiple independent or predictor variables and one response or dependent variable. In machine Learning, CART model builds for classification and regression purpose When decision tree is applied for classification purpose then it refers classification tree and if it is applied for regression then it may refer regression tree. A decision tree is also known as Regression tree. In this paper, we are concentrated on the concepts of Linear regression and Regression tree. A dataset is incorporated from UCI (Machine learning Repository) for this research work. The objective of study is to distinguish the results obtained from Linear regression and regression tree. At the end, decision tree gives better results than linear regression and the final predictive model is selected on minimum mean sum of square.

Underground Drainage Monitoring System for Metropolitan Cities

Shailesh Kesarkar, C.Damotharan, Vinayak Pawar , Prof. P. U. Shinde

To subside flood contamination from storm siphoning release, a consistent observing system for storm waste stockpiling was created, considering channel accumulating model, ultrasonic sensors, remote correspondence and electronic geographic information structure. The checking system has been applied into Cohering squander structure, Shanghai, an alternate leakage system with dry-atmosphere sullying area into storm pipes. It shows included whirlwind drainage the reason of terminal waste water ascent of 2.6 m, the energy essential condition to work storm siphons. The constant checking system builds up structure for development of consistent control plan of the investigation region.

Conversation of Traditional Bicycle To E-Bicycle

GorakhChoudhari, Rukmini Jadhav, Lokesh Mhetre, Mrityunjay Patted

The bike has gone from being an old-design recreational item to a less contaminating methods for transport and a smaller, ultra-light close to home portability device. This is the manner by which electrical bikes will be utilized as the column that could bolster singular open vehicle in huge urban communities' .worldwide an electric bike is a sort of electric vehicle dependent on a conventional bike to which an electric engine has been added to help impel it. It is a natural and urban vehicle and its wellspring of vitality is a battery. The target of this task is to create E-bike from typical Bicycle with 250W BLDC Motor and 24V battery. The batteries of the electric bikes can be revived by utilizing battery charger. What's more, a run of the mill electric bike needs 2-3hr to charge the battery and has a scope of movement of 35 to 45 km at a speed of around 20-25 km/h.

Traffic Sign Recognition using small-scale Convolutional Neural Network

Tejas Chaudhari, Ashish Wale, Amit Joshi, Suraj Sawant

Traffic sign recognition has been of utmost importance ever since the emergence of the need of autonomous vehicles and driver assistance systems. An effective preprocessing of the data is important in autonomous driving system. There is no scope to apply complex transformations or highly computational image processing techniques for such real time purposes. This work presents a approach to recognize traffic signs using small-scale deep convolutional neural networks (CNN) and that can be applied to different applications. The presented solution is implemented using German Traffic Sign Recognition Benchmark (GTSRB) dataset. This dataset is reliable, vibrant and has been used for training of different systems. The proposed system is an Advanced Driver Assistance System (ADAS) based solution to provide an effective assistance. The achieved testing, training and validation accuracies are 97.71 %, 99.19% and 99.61 % respectively.

Emotion Recognition - A review

Sukhpreet Kaur, Dr. Nilima Kulkarni

Emotion recognition plays a crucial role in the era of artificial intelligence and internet of things. It offers tremendous scope to human computer interaction, robotics, health care, biometric security and behavioral modeling. Emotion recognition systems recognize emotions from facial expressions, text data, body movements, voice, brain or heart signals. Along with basic emotions, attitude, control over emotions and power of activation of emotion can also be examined for analyzing sentiments. This paper identifies various supervised and unsupervised machine-learning techniques for feature extraction and emotion classification. Comparative analysis has also been made of various machine-learning algorithms used in referenced papers.   It tells the scope and applications of automatic emotion recognition systems in various fields. This paper also discusses various parameters to increase the accuracy, security and efficiency of the system.

Identification and Solutions for Grape Leaf Disease Using

Convolutional Neural Network (CNN)

Suviksha Poojari, Deepti Sahare, Bhagyashree Pachpute and Mayuri Patil

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Crops are facing many diseases nowadays. These diseases lead to major damage and economic loss and hence early detection of disease is necessary to prevent the damage acquired by the crops. Fallacious diagnosis and severity of diseases leads to improper use of pesticides. Expert naked eye observation is the primary method used by plant disease detection and identification. Yet examination of the naked eye is time-consuming, costly and takes a lot of effort. A classification is a system by which the leaf is classified according to its unique morphological characteristics. There are so many methods of classification, choosing a classification system is always a daunting task, because the consistency of the result differs according to different input data. Image processing is one of the commonly used methods for the identification and diagnosis of plant-leaf diseases [8].More effective methods are developed and proposed for the early detection of plant disease with lowest processing period due to technological and scientific advances.

Cyberbullying Detection in Social Networks: A Survey

Nikita Singh, Aishwarya Sinhasane, Sagar Patil and S. Balasubramanian

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Rate of innovation is increasing rapidly. This growth in innovation gives another dimension of communication. But in spite of the fact that innovation inspires us in various parts of life, it go with different effects that influence people in a hardly or the other way. Cyberbullying is one of them. Social media gives a platform to communicate with masses, but it also becomes a place for negative comments and cyber-bullying. Cyberbullying is bullying executed through digital equipment's like computer laptop and mobile devices. Cyberbullying occurs on social media, chat rooms and gaming platform where people can view and share their own content. Cyberbullying include sending hurtful messages posting sensitive photos or video on social media, and extending mean rumors online.

Estimation of failure sustainability factor in Today's Youth: An Experimental Analysis

Vijaylaxmi Bittal and Rubi Mandal

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Today's Youths are the backbone of the nation and they are future assets of the nation. But in today's environment youths are easily attracted and influenced by frequent changes of their surroundings. These qualities are becoming an inseparable source which is influencing not only their present life but also their future life. The main objective of this paper is to identify the failure sustainability factor of the youth using a data analysis approach. This paper demonstrates how we can extract the thinking pattern of today's youth by analyzing the

digital responses we gathered from action oriented questionnaires and then classifying the text to approach towards the decision making for failure sustainability factor. Using data analysis as a platform this work intends to gather the real time data from today's youth which helps us identifying their thinking patterns, their interests.

Detection of COVID-19 from CT Images using ResNet50

Sanika Walvekar and Swati Shinde

Coronavirus (COVID-19) outbreak which is a global health pandemic occurred due to (SARS) Severe Acute Respiratory Syndrome and SARs-CoV-2 has an immeasurable impact on the entire world. Affecting almost every country of every continent COVID-19 has killed more than 300,000 people. To identify, the severity of the disease CT findings are useful along with the RT-PCR test. In this study, CT images are pre-trained and fine-tuned further trained and tested using ResNet50 model. This model can be used to classify COVID-19 cases from pneumonia and other medical conditions. By using this model, early detection and low fatality rate can be achieved.

AI Based on Image Caption Generation

Prachi Waghmare and Swati Shinde
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Artificial Intelligence is doing a great progress in all factors, so automatically detecting the content of an image is a basic and important problem in AI fields that deals with the computer sight and natural language processing. The paper is a study about the model based on a deep recurrent architecture that interact with the recent advances in done in image captioning in computers sectors and machine translation fields and that can be used to produce a natural sentences that gives detailed information of an image. Image captioning is a piece of work that requires the understanding of images and the awareness of producing a correct description sentences with proper and suitable structure by extracting the features of image.

Analysis and Design of Retaining Wall: A Review

Anjali Diwalkar
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Retaining walls are generally rigid walls made to support the soil mass laterally. The purpose of this review study is to understand analysis of retaining wall. Lateral earth pressure is main factor in analysis and design of retaining wall. Also about stability against overturning & sliding of the retaining wall.

Review Paper on Communication and Networking for the Industrial Internet of Things

PriyankaNagarale

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This paper aims at providing an overview of existing communication technologies and how they may be adapted for the Industrial Internet of Things (IIoT) it addresses the unique challenges for implementing the IIoTs. In this paper, we review existing communication systems for industrial automation and the challenges that Faces when implementing the IIOT. Then we discuss overview of local communication within industrial automation and especially focus on the use of wireless technologies. Afterward it explains how this locally organized communication infrastructure can be extended to a global scope, enabling communicating within factory and manufacturing units.

Automatic Water Reading and Billing System by GSM Module

Manish Gavande, Shradha Yashwad, Dhanashri Gaikwad and Nilam Ghuge
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The restructuring of the Maharashtra State Electricity Board is changing the power scenario in the state. Within a span of one year, the restructuring has started yielding good results and there seems a great promise for the future of the power sector in the state. Proper restructuring of an electrical utility is possible only by proper analysis of the randomly varying parameters of the entire system. The analysis of these randomly varying parameters is done using various statistical methods. These statistical methods include probability distribution functions like Weibull Distribution, Beta Distribution. For the purpose of proper planning and forecasting the average values of these parameters are calculated by the above said methods and are compared with arithmetic mean.

GSM based Polyhouse Farming and Controlling using Bidirectional Pump

Pratiksha Potghan, Sumit Suryawanshi, Payal Katke and Nilam Ghuge

A Polyhouse is where plants are developed. Polyhouses are regularly utilized for developing blossoms, vegetables, foods grown from the ground plant. Basic factors affecting plant growth are sunlight, water content in soil, PH level of water, etc. These physical elements are to control physically inside a Polyhouse and a requirement for robotized configuration emerges. Consequently controlling all the elements that influence plant development is likewise a troublesome undertaking as it is costly and some physical variables are between related. System also allows transmission of process parameters, including emergency alarm signals via e-mail client server or alternatively sending a SMS on a mobile phone using GSM Module.T.

Wireless Control Multipurpose Agriculture Robot

Sagar Ingle, Sumedh Sonvane, Samadhan Lokre and Mritunjaya Patted

Now days the system will manually work in the agriculture land, so the manpower, energy and money alsoincreased. So proposed system an automatic grass cutter, seeding and water supply with several features has beenproposed. Several related works has been studied in order to gain idea on how to build an automatic grass cutter.
Most research is on the robot path planning using variety technique. We also used the solar based energy forstoring in to the battery to use more functions for do agriculture activity.

Automatic Temperature Based Fan Speed Controller Using Arduino

Shivani Mohite, Shivshankar Adsule, Rahul Patil and Namrata Dhawas

The temperature-based fan speed control system can be done by using an electronic circuit using an Arduino board. Now Arduino board is very progressive among all electronic circuits, thus we employed Arduino board for fan speed control.The proposed system is designed to detect the temperature of the room and send that information to the Arduino board. Then the Arduino board executes the contrast of current temperature and set temperature based on the inbuilt program of the Arduino.

MSA: An Application of Brain Storm Optimization Algorithm

P. Jeevana Jyothi, Karteeka Pavan, S.Raiyyan and T. Rajasekhar

Brain Storm Optimization(BSO) algorithm is one of the novel swarm intelligence algorithms motivated by the brainstorming of the human being's behavior for solving optimization problems. In Bioinformatics, Multiple Sequence Alignment is essential. Though a substantial number of algorithms have been designed for aligning sequences, the decisive estimate of optimal multiple alignments is still a challenge. In this paper, we proposed an efficient method by using the Brain Storm Optimization algorithm in order to discover optimal alignments in

multiple sequence data. The experiments with the proposed algorithm perform optimal solutions when compared to evolutionary based Genetic algorithm.

Extraction Endocardium and Epicardium of Left Ventricle using internal and external energy terms of signed distance function in cardiac MRI

Shilpa Pawar and Sudhir Dhanure
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For clinical detection of cardiac function such as ejection fraction, end systolic volume and end diastolic volume used MRI (Magnetic Resonance Images). These functions were evaluated from experts manually or semi automatically, they were time consuming and tedious. This paper applies automatic evolution of inner contour and outer contour on the MICCAI 2012 database of cardiac MRI. This paper gives optimistic result in terms of boundary line and cross section area of the epicardium and endocardium of left ventricle. This paper will be useful for experts to quantify the endocardium and epicardium for Cardiac Vascular Diseases (CVD) type.

Dual Tree Discrete Wavelet Transform and Entropy based Approach for Video Shot Boundary Detection

Neelam Labhade-Kumar, Yogesh Kumar Sharma and Parul Arora

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Shot Boundary detection is one of the most prominent steps for the various video processing techniques like indexing of videos, video retrieval, video summarization, video scene analysis etc. In this paper we have projected a useful technique based on dual tree discrete wavelet Transform. The dual tree structure with selected filters returns the approximate decomposition in analytical manner. Due to the existence of the two trees noise component is characterized precisely. The outcome of the DTDWT is distortion less with normalized localized function and exact reconstruction of signal. WE have used the entropy function to measure the uncertainty in the random variable. Finally we evaluated the algorithm using Recall, Precision and F1 measure. Experimental results demonstrate the efficiency of the given method.

Implement an Informative system for the Farmer to maximize the yield of farming using Machine Learning Approach

Ankita Tidake, Yogesh Kumar and Vivek Deshpande

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Nowadays, information is a basic necessity of everyday life. Farmers constitute a particular group of users whose information needs is very specific pertaining to agriculture. Farmers require daily information for various agricultural works. As India is known as agricultural country, maximum people have agriculture as their primary occupation. As the scenario of India in the agriculture field regarding its productivity is diminishing day by day

because of increase in population, farmers as well as economic of our country are facing so many problems regarding crops yield production. We have decided to work in agricultural field to help farmer maximize the crop yield production through timely messaging of crop related information. Research is mainly focus on crop yield production by using machine learning approach.

Human Emotion Recognition using Physiological Signals: A Survey

Abhishek Chunawale and Mangesh Bedekar

Affective Computing originates from the study of human emotions. Emotions are one of the ways to express our feelings. Over the years, psychologists have developed various emotion models to explain emotional or affective states of human. Affective Computing uses various models of emotion and machine learning algorithms to classify emotions. Machine Learning enables computers to learn from the training datasets and classify new input, thus it can be effectively used to teach computers to understand human emotions. This paper focuses on survey of human emotion recognition using physiological signals related to human body like Electrocardiogram (ECG), Electroencephalogram (EEG), Electromyogram (EMG), Galvanic Skin Response (GSR), Respiration (RSP), Skin Temperature (SKT), etc. It also describes challenges in physiological sensing for Affective Computing.

Performance Analysis of CMOS Technology

Sarthak Talwar, B.Mohapatra, Dr. Rashid Ansari

The project titled "Performance Evaluation of CMOS Technology" is a research conducted to provide students with guidelines about what to invest their time in field of VLSI & ULSI technology and enlighten them about various parameters of Scaling of CMOS technology which is the most used IC technology in the world. This report also studies the range of scaling of MOSFET and its limits. Performance of a device relies highly on the performance of IC and Transistors used in its circuit hardware.

This research provides students various results on unreliability of Student Version Simulation software in designing new generation hardware and how power dynamics of highly scaled technology cannot be verified using such tools.

Stock Market Predication Using Machine Learning

Nitish Verma and B. Mohapatra

Accuracy is key factor of predicting a stock market. In last decade investors uses time series method is used to predict stock prices. But it needs improvement because time series uses large data and time. In given system, we are using Machine learning to predict stock prices. Machine learning is for enabling machine to learn like human by collecting, storing, analyzing data and developing a decisions making on its own. Performing a search vector machine in supervised machine learning algorithm can be done by studying an algorithm and by statistical model. Linear regression techniques show an accuracy of 82%. Whereas, the proposed method shows an accuracy than 97% in prediction.

IOT Enabled Smart Irrigation System Using Arduino

Sandeep Bavkar, Neha Patil, Yugandhara Birje

The main aim of the paper is to process real-time data acquisition under irrigation automation; hence it is essential to monitor and control irrigation parameters like water, moisture, humidity, temperature according to plant requirement. Adapting a technology like IoT (Internet of Things), one can achieve the above mentioned objectives effectively and does record an observation that is clear and accurate than human resources. We are going to propose a system that will help with better yield and growth of the crop. In our research paper, humidity and temperature sensor will sense the moisture in the atmosphere. If the humidity is low, as well as the output from a moisture sensor is less than the desired value, then the motor will turn on, and the plant will receive the desired amount of water required for its growth. The process of switching on and off of the motor can be done manually as well as automatically.