PROCEEDINGS OF INTERNATIONAL CONFERENCE ON INFORMATION & COMMUNICATION ENGINEERING

ICICE-2021

February 11-13, 2021

ISBN : 978-93-5437-185-1

BHARAT INSTITUTIONS

Imparting Value Based Education

Organized by

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING (ECE)

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Accredited by NAAC and Accredited by NBA : UG Programmes - CSE, ECE, EEE & Mechanical,
Approved by AICTE, New Delhi and Affiliated to JNTUH

**Mangalpally (V), Ibrahimpatnam (M), R.R. Dist - 501 510,
Telangana, INDIA.**

In Association with :

The Institution of Electronics and Telecommunication Engineers

IBM - INDIA

and

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FROM EDITOR DESK

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Associate Professor, BIET

Dr. Anil Kumar Sahu
Associate Professor, BIET

Mr. Abhishek Kumar
Assistant Professor, BIET

Mr. N. Pitcheswara Rao
Assistant Professor, BIET

It gives us immense pleasure to release this proceeding as a most valuable baton of memories on the occasion of International Conference on Information & Communication Engineering, ICICE-2021, February 11 - 13, 2021

With the privilege of knowledge comes the burden of action. Without one, the other is in vain. As an institute of higher education, this principle is even more relevant. We are privileged to be in a position where we can actively pursue knowledge and refine our expertise in many different fields of study. Hence the knowledge shared by experts in such conferences is a valuable asset. The contents and the message brought out from this conference will help the participants to have an expert's opinion in their respective field. We believe that these proceedings will be an asset for all the participants in the conference.

The implications of such unification are vast and there is much promise in what we could achieve. We should be aware that no significant change comes without struggle, and that, even with struggle, change is not immediately obtained. We render our efforts anew and strengthen the ties the bond us together to serve a cause greater that ourselves. Hence, we are immensely indebted to the organizing committee in particular organizing convener for assigning us this pleasant duty of preparing the proceedings of the conference. We thank all for the words of advice, direction and encouragements.

There were many people aiding our progress from beginning to end; writers and designers who made direct and visible contributions, HODs and Faculty who gave their time and advice and even the students who would often ask us when this issue is going to print, I thank the, all for their valuable support.

At the end, I wish this conference a grand success and hope that this sort of events is organized again and again in future.

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Dr. Papiya Dutta
Dr. Anil Kumar Sahu
Mr. Abhishek Kumar
Mr. N. Pitcheshwar Rao

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MESSAGE

The International conference on “Information & Communication Engineering” is well thought over and well-timed by the Organizers. The International conference gives good opportunity to researchers, students and faculty to present their hard work in the form of technical papers and get feedback from delegates for further progress of their research. Educational Institutions all over the world treat research as the second eye on their face, first being teaching. Interaction between delegates during the conference enhances further the cause of research.

This International conference is being organized by Bharat Institute of Engineering and Technology, a prime college in this region. I extend a warm welcome to the delegates to this conference and wish a grand success to the organizers.

With Best Compliments,

Prof. G. Kumara Swamy Rao
Senior Director, BIET

MESSAGE

I am happy to learn that Bharat Institute of Engineering and Technology is conducting an International Conference on "Information & Communication Engineering" ICICE-2021February 11 - 13, 2021.

In this age of rapidly evolving technologies, it is essential for all professionals to keep abreast of the latest developments in emerging technologies, especially in the area of Information & Communication Engineering. Certain issues and challenges faced in these areas need to be addressed and proper solutions be provided.

In this regard the International Conference on "Information & Communication Engineering" ICICE-2021provides an ideal platform for academicians and industry leaders to share knowledge and experiences also the various sub-themes of the Conference will offer the delegates opportunities to learn about new technologies and apply the same in their respective workplaces.

I congratulate the ECE faculty for organizing the International conference regarding the vital issues that are pertinent to Information & Communication Engineering. My best wishes for the grand success of the Conference.

With Best Compliments,

Dr B. Prasada Rao
Director of Training and Placement, BIET

GUEST

It is a great honor for me to address on the occasion of International Conference on "Information & Communication Engineering" ICICE-2021 organized by the Department of Electronics & Communication Engineering on February 11 - 13, 2021 I extend my warm greetings to all the participants of the International Conference and convey my best wishes to the organizers for the success of the Internal Conference.

This International Conference is an effort in the direction to give an exposure to the academicians on the recent development in our field. This International conference also provides a platform to the students to exhibit their inherent talents both as participants and organizers. I place on records with appreciation the hard work, involvement and effort taken by the team of staff and students in organizing this International conference. I congratulate all the concerned with gratitude and wish the Internal conference a grand success.

With best Compliments,

Dr. Jaiteerth R. Joshi
FIE, FISNT, FISME, FIIPE, FTAS
Project Director (IAC)
Program Leader (KUSHA)

GUEST

It is indeed pleasure to express my happiness on the occasion of International Conference on "Information & Communication Engineering" ICICE-2021February 11 - 13, 2021 in Bharat Institute of Engineering and Technology, Hyderabad, India,

There is some evidence that, to be effective in education, ICT must be fully integrated into the pedagogy. Specifically, when teaching literacy and math, using ICT in combination with writing to learn produces better results than traditional methods alone or ICT alone.The United Nations Educational, Scientific and Cultural Organization (UNESCO), a division of the United Nations, has made integrating ICT into education part of its efforts to ensure equity and access to education. The following, taken directly from a UNESCO publication on educational ICT, explains the organization's position on the initiative.

I extended my hearty greetings to all members of organizing committee team and congratulate the participants for their commendable work, I wish the participants of this International conference all success in their efforts.

With best Compliments

Dr. Dhananjay Kumar
Professor and Head,
Department of Information Technology,
Anna University, MIT Campus, Chennai

GUEST

Bio: Col Venkat is a serving Army officer from the Technical branch (Corps of Electronics and Mechanical Engineering) having done his mechanical engineering from Army Engineering institutes.

The officer is having a vast experience, and served in all possible appointments of command, staff and instructional across the country and abroad, the officer is presently on deputation with AICTE and is handling faculty development, related issues and release of grants through AICTE - AQIS schemes.

The officer has a unique distinction of representing India as its Defense Attache' to Russia.

The officer also handles AICTE's quality initiatives like NITTT (National Initiative for Technical Teachers Training), which is mandatory for the purposes of regularization and promotion to all teachers, Examination Reforms implementation, 360-degree feedback of faculty members towards overall improvement of teaching and learning and the most important implementation processes of NEP 2020.

"Future education is mainly technology oriented. Bharat Institute of Engineering and Technology is committed to build and sustain itself as an institution where quality is the hallmark in each and every activity. Besides acquiring technical skill, our students are molded to be a competent citizen of our society and nation.

I Congratulate all the concerned for organizing this International conference and bringing out its proceedings. Such conferences are need of the day and helps the academicians get exposed to the various latest developments in their field. Updating is very important in the life of an educationist and all such are supported and encourage at Campus of BIET."

With best Compliments,

Mr. Col B.Venkat
Director, AICTE

GUEST

Bio – Mr. Mrityunjay Vishwakarma is a community leader for developer ecosystem across India and South Asia. He has around 16 years of IT experience and has notable achievements leading to innovative solutions, programs. He is also a Agile coach and member of IBM Agilr Academy and represented paper at IBM Regional Technical Exchange for India, South Asia. He has received many notable accolades including IBM Best Manager and Hall of Fame award. He is a firm believer, passionate about solving worlds complex challenges by enabling developers on emerging technologies. He has also mentored multiple startup's and judged many hackathons across India.

" I feel immense pleasure and proud to be a part ofInternational Conference on "Information & Communication Engineering" ICICE-2021 organized by the Department of Electronics & Communication Engineering on February 11 - 13, 2021.

On this occasion I take this Opportunity to congratulate all the staff members and students of ECE departments for their efforts and initiative and wish them the very best for success throughout their life. I congratulate all the concerned with gratitude and wish the International conference a grand success."

With best Compliments,

Mr Mrityunjay Vishwakarma
Leader, Developer Ecosystem
IBM India Software Labs

KEY NOTE SPEAKER

I am privileged and very much delighted to applaud the ECE Department for hosting an International Conference on "Information & Communication Engineering" ICICE-2021 February 11 - 13, 2021 at Bharat Institute of Engineering and Technology, Hyderabad, India. The conference brings researchers, academics, and industry professionals together at one platform in a hot research area to share their technical expertise, research findings leading to future scope of world's technological developments. This important event will be held in BIET campus in an online mode and includes keynotes, technical sessions, and workshops. The vision of ICICE-2020 is to bring the world together in harmony through Communications and Networking Technology research, application, education, and incubation of new ideas. I wish the participants of this international conference to find the papers and event inspiring and enjoyable and also enable them to network with their peers to assess and take forward these technical areas further. I congratulate the organizers for organizing such a conference and my best wishes for the grand success of the conference.

With best Compliments,

N.Sundararajan, Professor (Retd.)
B.E(Hons)(Madras); M.Tech(IIT-M), Ph.D(Illinois), Life Fellow, IEEE; Fellow, IES; Asso Fellow, AIAA
Nanyang Technological University, Singapore, 639798

KEY NOTE SPEAKER

I am extremely happy to know that, Bharat Institute of Engineering and Technology is organizing an International Conference on "Information & Communication Engineering" ICICE-2021February 11 - 13, 2021.

The transformation and rejuvenation of electronics is happening around the world and this became an essential change in any technical based society. We need to collaborate and work together to learn and enhance the technical developments.

I earnestly trust that this International conference will provide an effective platform to bring people from different sections of technical society. All the participants can use this platform for discussing and learning issues and challenges concerning with the Information & Communication Engineering.

I have, therefore strong conviction that the deliberations of the conference would immensely help the participants to acquire the knowledge in the latest trends in the electronics and relevant fields.

I appreciate the efforts of the ECE department for organizing the International conference. May the International conference be enriching, fruitful and memorable. I wish the International conference a success.

With best Compliments,

Dr. Dhananjay Singh
Associate Professor, Dept of ECE
Hankuk(Korea) University of Foreign Studies

KEY NOTE SPEAKER

I am happy to know that ECE Department for hosting International Conference on "Information & Communication Engineering" ICICE-2021February 11 - 13, 2021 at Bharat Institute of Engineering and Technology, Hyderabad, India,

The term ICT is also used to refer to the convergence of audiovisual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives to merge the telephone network with the computer network system using a single unified system of cabling, signal distribution, and management. ICT is an umbrella term that includes any communication device, encompassing radio, television, cell phones, computer and network hardware, satellite systems and so on, as well as the various services and appliances with them such as video conferencing and distance learning.

I wish the participants of this international conference find the papers and event inspiring and enjoyable. I congratulate the organizers for organizing this conference and my best wishes for the grand success of the conference.

With best Compliments,

Er. Nuli Namassivaya
Secretary,
IETE, Hyderabad.

CONFERENCE CHAIR

It is essential to spread the awareness about the latest developments and achievements of engineering and technologies, especially among students and the younger generations to motivate and excite them to gear up for the future of Indian Engineering and Technological applications. The Department is committed to add value to intellectual, moral, social and technological capabilities of a student.

In any event, success requires sufficient time, complete and wholehearted support from all the people involved in the event. We thank Prof. G.Kumaraswamy Rao, Our senior director and Dr B. Prasada Rao, Director of Training and Placement, for constant motivation and support. We extend our sincere gratitude to the Guests for accepting our invitation to inaugurate ICICE-2021. We are indeed honored to have the experts for enlightening and motivating the participants in the conference.

Our sincere thanks goes to all the authors for submitting and presenting their quality paper(s) at this conference. We are incredibly grateful to reviewers who have given their valuable time reviewing and providing comments to improve the quality of the papers. We also express our gratitude to the technical program committee members for their immense support and motivating in making ICICE-2021 a success.

With Best Regards,

Dr. Arun Kumar
Professor & HoD, BIET
Former Director, DIC, Panagarh, DRDO &
Scientist, ASL Hyderabad.

MESSAGE

Dear Friends,

It gives me immense pleasure to write a message for "International conference on Information & Communication Engineering-2021.

BIET has borne the mantle of excellence, committed to ensure the students their own space to learn, grow and broaden their horizon of knowledge by indulging into diverse spheres of learning. In our endeavor to raise the standards of discourse, we continue to remain aware in order to meet with the changing needs of our academia and industry.

This conference would provide platform to students, Researchers and faculty to spread the awareness about the latest trends and advancement in electronics and communication engineering. This three day International conference on "Information & Communication Engineering-2021" will be held from 11th to 13th Feb, 2021. Organizing such an event at this point of time reinforces our objective of developing an environment for the exchange of ideas towards technological developments.

I wish the conference would be able to deliberate on recent national and international relevance, particularly in the field of cloud computing, data mining, networks, image processing, big data analytics etc. There have been unprecedented numbers of quality papers that are to be presented in the conference. I am sure that this occasion will provide an affable environment for the students, researchers and faculties to freely exchange their views and ideas with others.

I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the success of the conference ICICE 2021.

With Best Regards,

Dr. J. P. Singh, FIE
Professor & Principal
BIET, Hyderabad

MESSAGE

I am glad to know that, The Electronics and Communications department of Bharat Institute of Engineering and Technology is organizing aInternational Conference on "Information & Communication Engineering" ICICE-2021, February 11 - 13, 2021.

The theme of the "Information & Communication Engineering" is extremely relevant and benefit to the fraternity of Academicians, Industrialists and Technical Students. The recent advances in Information & Communication Engineering have changed in many ways. This has certainly increased the efficiency and effectiveness of using the knowledge for development of the society.

It is time for all of us to get acquainted with the advancements and to provide solutions for the unresolved challenges. This International conference will provide an opportunity for all the delegates and professionals to deliberate and discuss the latest developments in this field.

I congratulate and compliment all the ECE faculty members for organizing the International conference. I welcome all the delegates and participants to the conference and wish the organizers for the grand success of the conference.

With best Compliments,

Dr. Rajasekharaiah K.M.
Dean Academics, BIET

CONVENER

I am delighted in acknowledging the International Conference on Information & Communication Engineering, ICICE-2021, February 11 - 13, 2021 organized by the Department of Electronics and Communication Engineering. Information and communications technology (ICT) all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. Although ICT is often considered an extended synonym for information technology (IT), its scope is broader.

I appreciate the organizing committee for showing a keen interest in organizing a successful Conference and contributing new ideas and research findings. I wish them for their endeavors to spread knowledge.

What is Information and Communication Technology? Major cornerstone has been the number of key persons/researchers present for key notes and discussions in the conference.

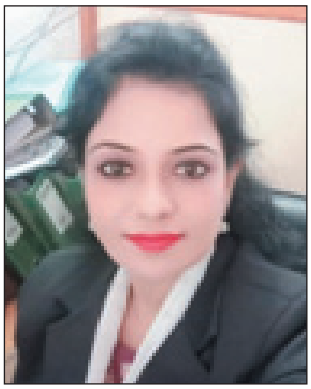
I wish that ICICE2021 will keep on growing in coming years with more impact on the International research community.

I thank the support of all authors, reviewers IEFRP office bearers, BIET faculty for making the conference a success.

With Best Regards,

Dr. Sanjay Kumar Suman
Professor, BIET

CO-CONVENER



Dr. Papiya Dutta
Associate Professor, BIET

Dr. Neeraj Kumar Misra
Associate Professor, BIET

We are glad to organise on behalf of The Electronics and Communications department of Bharat Institute of Engineering and Technology is organizing an International Conference on "Information & Communication Engineering" ICICE-2021, February 11 - 13, 2021.

Future education is mainly technology oriented. Bharat Institute of Engineering and Technology is committed to build and sustain itself as an institution where quality is the hallmark in each and every activity. Besides acquiring technical skill, our students are molded to be a competent citizen of our society and nation.

We congratulate all the concerned for organizing this International conference and bringing out its proceedings. Such conferences are need of the day and helps the academicians get exposed to the various latest developments in their field. Updating is very important in the life of an educationist and all such are supported and encourage at Campus of BIET.

ORGANIZING SECRETARY

Dr. Amit Agarwal
Associate Professor, BIET

Dr. Rajeev Shrivastava
Associate Professor, BIET

We are gratified being designated as the organizing secretary for International Conference on "Information & Communication Engineering" ICICE-2021, February 11 - 13, 2021.

The aim of the conference is to bring together researchers, scientists, engineers and practitioners to exchange and share their experiences, new ideas and research results about all aspects of main themes and tracks.

The conference has solicited and gathered technical research submission related to all aspects of major conference themes and tracks. After the rigorous peer-review process, the submitted papers were selected on the basis of originality, significance, and clarity for the purpose of the conference.

We are grateful to all those who have contributed to the success of ICICE-2021, especially all the authors and the participants who responded to our call for papers. We also express our sincere gratitude for the efforts put by conference Organizing Committee, who made this event possible.

Finally, we wish all the participants have a unique, rewarding and enjoyable time at ICICE-2021in India.

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International Conference on Information & Communication Engineering
(11th February - 13th February, 2021)

S.No	Date	Time	Event	Resource Person	Session Coordinator
1	11/2/2021	11:30 am-12:30 pm	Pre Conference Workshop	IBM	Mr. Abhishek Kumar
2	12/2/2021	10:30 am-11:30 am	Inaugural Function & Key Note Address 1	Dr J R Joshi, Project Director Kusha, DRDO	Dr. Amit Agrawal & Dr. Rajeev Shrivastava
3		11:30 am -12:30 pm	Key Note Address 2	Dr Dhananjay Singh, Former Head Global Division of IT, South Korea	Dr. Sanjay Kumar Suman
4		12:30 am-1:30 pm	Technical Session 1 &2	Session Chair: Dr. Manisha Sharma/ Dr. Kamal K Mehta	Dr. Rajesh Tiwari & Dr. Ritesh Kushwaha
5		1:30 pm -2:30 pm	Lunch		
6		2:30 pm -3:30 pm	Key Note Address 3	Dr. N. Sundararajan, Former Prof. Electrical Engineering, Nanyang Technological University,	Dr Papiya Dutta
7		3:30 am-4:30 pm	Technical Session 3 & 4	Session Chair: Dr. Bandan Kumar Bhoi	Dr. Neeraj Misra
8	13/2/2021	10:30 am-11:30 am	Key Note Address 4	Er. Nuli Namassivaya, Secretary , IETE	Dr. Anirban/Dr. Shanaz
9		11:30 am -12:30 pm	Technical Session 5 & 6	Session Chair: Bhupendra Singh Thakur	Dr. Amit Agrawal
10		12:30 am-1:30 pm	Lunch		
11		1:30 pm -2:30 pm	Technical Session 7 & 8	Session Chair: Dr. D S Kushwaha / Dr. Sankit Ramkrishna	Dr. Neeraj Misra
12		2:30 pm -3:30 pm	Key Note Address 5	Dr Dhananjay Kumar, Prof and HoD, MIT Campus Chennai	Dr. Sanjay Kumar Suman
13		3:30-4:00 pm	Valedictory Function		

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ICICE2021-002

Smart Construction Vest: A New Step Towards the Future of Occupational Health and Safety Management System for Construction in the Philippines

Abainza[1], R. E. M. Aguilar[2], H. C. Edmondson[3]

Mapua University Philippines[1,2,3]

Abstract

This paper aims to identify the effectiveness of Smart Construction Objects (SCO) in the form of a smart construction vest as Occupational Health and Safety Management System for Construction in the Philippines construction. The researchers will compare the effects of using this device as a mechanism to monitor the response to construction hazards in construction sites versus projects that are not using this device. This study will provide future researchers and safety professionals the information and knowledge in this device that can help ensure the safety of the workers and integrate this to the safety and health management system in the Philippines as part of PPEs.

ICICE2021-003

Collaborative Filtering Based Approach for Movie Recommendation Using Machine Learning

Saurabh Sharma[1,] Harish K. Shakya[2]

Amity University, Gwalior (M.P.)India[1,2]

Abstract

One of the most widely used approach for providing personalized services to customers is the Collaborative filtering technique. Similarity between users based on user-item rating matrix is the key essence of this approach for providing recommendations to users. Similarity algorithms like cosine, manhatten, euclidean etc. play a prominent role in determining similarity between users. Our proposed paper presents a new model to enhance the performance of recommendation when only few ratings are available. The model not only considers the local context information of user ratings, but also the global preference of user behavior. Experiments for our proposed system are carried on MovieLens dataset using machine learning. The results show the superiority of our proposed model in recommended performance.

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ICICE2021-004

Novel Approach for Rapid Data Gathering in Energy Aware Wireless Sensor Networks

Ramkrishna Ghosh

KIIT Deemed to be University India

Abstract

Data gathering is one of the most essential usages of Wireless Sensor Networks (WSNs). In WSNs, users would like to incessantly take out data from the networks. Nevertheless energy proficient data gathering and accumulation in WSN is at all times a demanding concern. The network topology and interferences can bring about noteworthy outcomes on data gathering and accumulation. In our research work, we recommend employing multiple frequency channel allotment since arrangement of a communication by means of several quantities of frequencies is additional proficient whilst evaluated with particular frequency. In our planned organization, energy management assists in decreasing the schedule duration and multiple frequency scheduling may be adequate to get rid of the intrusion largely. Our projected arrangement to attain accomplishment in record over various exploitation densities, decide the effect of various interferences and frameworks for channels on the schedule span, is to boost the effectiveness of data gathering by means of WSN.

ICICE2021-005

Survey of Phishing Email Classification Techniques

Sonali Sonavane[1], Shabista Shaikh[2], Prishita Kumar[3], and Shweta Mache[4]

G.H Raisoni Institute of Engineering and Technology, Pune,India [1,2,3,4]

Abstract

This is a survey paper about numerous algorithms and techniques used for detecting and classifying phishing or other fraudulent emails. The number of unwanted phishing emails are growing extremely day by day. This suggests the necessity to plan a reliable frame-work to recognize and eliminate phishing emails. Our main aim is to reduce this attack from the world. Our survey of many papers suggest deep learning as a trustworthy algorithm for our problem.

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ICICE2021-006

Comparative Study on Covid-19 Cases in Top 10 States/UTs of India in Using Machine Learning Models

Dr. Deena Babu Mandru[1], and Dr. A. Ramasway Reddy[2]

Malla Reddy Engineering College (Autonomous)India[1,2]

Abstract

Coronavirus is a dangerous sickness that came from a new virus. It has been assumed as an overall pandemic and a very hard circumstance to control the COVID-19 epidemic in India and global and so needed some severe actions to control its rate of increment. This disease causes cold, dry cough, high fever, sore throat and serious breathing problems. This paper presents analysis of confirmed, cured and deaths cases, age and gender based cases in top 10 States/UTs of India. We analyzed various trends and patterns from various state/UTs units, MHFW of India data sources (up to 16th November 2020). Now a day's plentiful models are proposed to predict covid-19 cases in India and world countries. The novel COVID-19 datasets are taken from Kaggle and GitHub repositories to analyze the epidemiological cases of the disease in top 10 states/UTs of India. We used various machine learning algorithms like Linear Regression, KNN Regressor, LASSO Regression, Elasticnet Regression and Decision Tree regressor to analyze the number of novel Coronavirus (COVID-19) reported cases in top 10 states/UTs of India. The model analyzes datasets containing the COVID-19 cases (confirmed, cured and death cases) up to 24th November, 2020 using ML models. From the results it is proven that Decision Tree and KNN regressor performs best in analyzing the number of confirmed cases and number of death cases. But for a number of cured cases LASSO and linear regression models give the best accuracy results. Unfortunately, Elastic net produced poor accuracy results due to some changes in original datasets. This work analyzes the calculations based on the exactness rate on a test dataset.

ICICE2021-007

Literature Survey on SS7 Vulnerabilities and Detection of Network Attacks in Fiji

Jiuliasi Uluiburotu[1] and Satyanand Singh[2]

Fiji National University Fiji[1,2]

Abstract

The SS7 Signaling Network is the main lifeline of telecommunication networks based on 2G and 3G technologies. Previously confined in a walled garden, SS7 has become more exposed due to increased liberalization of the market in conjunction with the industry switching to IP technology. In this paper, a detailed overview of SS7 signalling threats and vulnerabilities for Fiji telecommunication is presented. In an effort to mitigate these attacks, negotiation is in progress with Network Operators in Fiji that are Telecom Fiji Limited, Vodafone fiji, and Digicel to use their data for analysis and detection that hackers are trying to infiltrate Fiji Mobile customers. Open source technology can also be used to simulate network traffic. This generated traffic was used to analyze and detect attacks against SS7 in an effort to propose detection mechanisms. Machine learning, big data, and anomaly detection techniques have been used as tools in order to propose an improved online protection system for SS7 networks.

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ICICE2021-008

Performance Evaluation of Various Cryptographic Ciphers on IoT Board

Mihir Mehta[1], Kajal Patel[2]

Gujarat Technological University[1],VGEC Chandkheda[2] India

Abstract

Physical devices are connected to the Internet Internet of Things architecture. They include collection of data, transmission of data and also to store a data. If there is no security algorithm deployed in IOT infrastructure, it can leads to greater security risks. IOT consists of resources which have limitation in terms of computational power and also storage capacity. Existing cryptography algorithms such as DES, AES and RSA can be deployed for providing Security to IOT applications. However, before deploying them on IOT boards; their performance should be examined. IOT prefers lightweight solutions. Preferred Solution should be fast and also it should occupy less storage area. Means Time complexity and Space complexity should be lower for preferred solution. In this paper, we have evaluated the performance of various cryptography algorithms on Raspberry Pi 4 board. We have measured Time Complexity, Space Complexity and Key Setup time for different above stated algorithms.

ICICE2021-009

Financial Markets Fraud Detection & Prevention using Machine Learning

Naveen Chakravarthy Sattaru Dr. Om Prakash Yadav

LPU, Punjab [1],ISL Engineering College, Hyderabad [2],India

Abstract

The investors may have great interest to invest in stock market. Moreover, financial markets like stock markets are driven by explosive factors such as social media, micro blogs and news that make it hard to predict stock market index based on purely the historical data. The financial services industries that involve financial transactions are suffering from fraud-related losses and damages. Machine Learning (ML) and Artificial intelligence (AI) are being rapidly adopted for a range of applications. It is important to begin considering the financial stability implications for every financial asset□s organization. Using the machine learning tools and techniques in the finance sector will become necessary because it will closely monitor nascent and rapidly evolving landscape, wherein data on usage are largely unavailable, and bereft of any analysis. Financial assets fraud has seriously affected investors' confidence in the stock market and economic stability. The huge economic losses incurred because of several serious financial fraud events and because of this the intelligent financial fraud detection has thus been the topic of recent advances. In recent years, several studies have used stock market and machine learning techniques to provide solutions to this problem. In this paper, we propose various states of art fraud detection techniques such as classification, clustering, and regression. This study aims to identify the techniques and methods that give the best results that have been perfected so far. Stock markets can benefit if fraud identification and prevention can be incorporated by using machine learning algorithms.

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ICICE2021-010

Detection of Brain Tumor in MR images using hybrid Fuzzy C-mean clustering with graph cut segmentation technique

Mamatha S K[1], and Krishnappa H K[2]

Dr.Ambedkar Institute of technology,Bangalore[1], R V College of Engineering,Bangalore,India [2]

Abstract

In medical image processing field segmentation task is very important process in order to diagnose any diseases in medical images taken from different machines. Medical images from MRI, CT scan, X-rays, Ultrasound and PET have different features, so the segmentation process is a very challenging task. In this paper, the graph theoretical approaches are proposed because it has flexibility representing any complex structure. Before the segmentation process, MR images are pre-processed using Region of Interest, Inverse method and Boundary detection method. In this method the segmentation of MRI brain images is performed using Fuzzy C-mean clustering with graph cut techniques. FCM algorithm is proved to be efficient in terms of computational rate by improving cluster center and modifying selection of seed points. Seed point selection is by using FCM clustering and derives a new technique called Fuzzy C-mean seed selection (FCMSS). This technique has improved accuracy of selection of the seed points in less time. Image segmentation is performed using the obtained path in a graph applied on a set of cluster regions of interest on MR images to detect brain tumors.

ICICE2021-011

Identification and Classification of Apple leaf diseases using Convolution Neural Network

Sukanya S Gaikwad [1]and Mallikarjun Hangargi[2]

Gulbarga University, Kalaburagi[1],Karnatak Arts, Science and Commerce College, Bidar,India[2]

Abstract

The goal of this paper is to identify and classify four types of fungi affected apple leaf diseases, which include apple scab, apple rust, apple black rot and healthy leaf of apple. The dataset is collected from Plant Pathology which consists of 12384 images. Among them 9908 are used for training and 2476 are used for testing. To the best of our knowledge, we are the first to work on this dataset. The proposed CNN based model identifies and classifies the apple leaves into these four categories. This model can successfully detect and classify diseases with an accuracy of 63%.

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ICICE2021-012

Using Bidirectional LSTMs with Attention for Categorization of Toxic Comments

Zubin Tobias[1], Suneha Bose[2]

Maulana Abul Kalam Azad University of Technology India[1,2]

Abstract

The online atmosphere is conducive for building connections with people all around the world, surpassing geographical boundaries. However, accepting participation from everyone is at the cost of compromising with abusive language or toxic comments. Limiting people from taking part in the discussions is not a viable option just because of misbehaving users. The proposed framework in this research harnesses the power of deep learning to enable toxic online comment recognition. These comments are further categorized using natural language processing tools.

ICICE2021-013

Analyzing Toxicity in Online Gaming Communities

Ayushi Ghosh[1]

Maulana Abul Kalam Azad University India [1]

Abstract

The video game culture resulting from the massive consumption of games has built various gaming communities online. The controversies in these groups, especially, the infamous Gamergate controversy indicates that sexist behavior is prevalent in this circle. The social dynamics of these communities are closely examined in this research. In particular, posts from Twitter and Reddit are analyzed to determine the racism, sexism, and political affiliation persisting in these groups. Twitter and Reddit posts related to 13 popular games are analyzed to find answers to the research question. NLP tools such as Bag of Words, Sentiment Analysis, and Word Embeddings are applied to analyze the posts. A formula is developed based on these tools to determine the extent of racism, sexism, and Trump-hate associated with each of the gaming communities. The results help in capturing and evaluating the emotional and linguistic properties of the conversational language that these communities engage in.

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ICICE2021-014

IANS - Implementation Of Autonomous Navigation In Ships And Ensuring A Stable Two-Way Communication Between Them Using Rockblock 9603 Satellite Communication Module And Raspberry Pi

Prithwijit Das[1], Deepankar Kumar[2], Siddhanta Dutta[3], Shuva Mandal[4] and Sumanta Chatterjee[5]

JIS COLLEGE OF ENGINEERING INDIA [1,2,3,4,5]

Abstract

Shipwrecks are generally caused due to negligence in navigation. As we know navigation involves human maneuver therefore misshapen is always a chance. To reduce this, it is our solution to create an autonomous navigation capable ship using 'Global Positioning System' support.Latitude and longitude coordinates will let the ship determine its exact location on the water body leaving that the final reaching destination will be predetermined before the departure of the ship. An imaginary path will be determined between the ship's location and the final location. A magnetometer sensor will be used to explain the geographical location of the ship to itself to give the direction of movement. In case any unpredictable obstacle appears on the radar the ship will be ready to create a temporary path to avoid the obstacle. After passing the obstacle it will continue to follow the previously determined path by tracking back to the coordinates that were fixed during setting the final destination coordinates.The Rockblock 9603 Satellite Communication Module is a transceiver that can be used to send short burst data to the Iridium satellite constellation and back to earth. We will be using this module to establish a reliable connection of the ship to the control room. Moreover, this module will help us make the ship navigate autonomously, without any human intervention.

ICICE2021-015

Design of High Speed & Power Optimized Sense Amplifier Using Deep Nano CMOS VLSI Technology

CHANDRAHAS SAHU[1],RAJA JHARIYA[2],DR.ANIL KUMAR SAHU[3]

SSTC (SSGI) Bhilai,Chhatisgarh [1,2] and BIET Hyderabad India[3]

Abstract

During this paper we've designed quicker & Power economical Sense electronic equipment for CMOS SRAM exploitation VLSI Technology i.e. primarily schematic of sense electronic equipment is intended & simulated exploitation ADS (Advanced style System). The sense electronic equipment then enforced & analyze at chip level exploitation Microwind three.1- a layout editor. The forty five nm & thirty two nm technologies are accustomed analyze performance of Sense electronic equipment. Our focus are to scale back the scale, to enhance the ability consumption and additionally to enhance the time interval of sense electronic equipment.

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ICICE2021-016

Deployment of Johnson's Algorithm in the cloud ecosystem for effective data management

Syed Owais Bukhar[1], Yawar Peerzada[2], Muneeb Bashir[3] and Sheikh Aaquib[4]

Jamia hamdard India[1,2,3,4]

Abstract

In the era of the current technological revolution, a rising tide of information has changed the way we manage data analytics. History stands testimony to the fact that when this juggernaut of data became difficult to manage, big data optimization became a one stop solution to all our data problems. As the dimensions of this data flow grew out of bounds of the current databases, we took to cloud computing. That said, this is just the beginning and not at all the ultimate panacea for our data hurdles. Data is rightly called the oil of the 21st century. However, this assertion is associated with a great paradox. One one hand, our dependence on data continues to increase with time and on the other hand, we find it difficult to manage the prevailing streams of data. This is where cloud computing takes charge. Cloud computing has its own pros and cons.One of the biggest problems with cloud computing is the time lag which is encountered in the delivery of online services to the end citizens. This paper introspects the prime causes behind this time lag. After this, the paper proceeds to propose the concept of Johnson's Algorithm which addresses the challenge of time lag quite effectively. The paper goes on to highlight other benefits that can be reaped by virtue of deployment of this algorithm. Backed by experimental results, we prove the effectiveness of this algorithm in adequate data management, speedy switching over between clouds and timely service delivery to the end user.

ICICE2021-017

Identifying the Websites that Maintain Operational Standards through Obligation Links to Website-Standards Approval Body

Srihari Rao Nidamanuru[1], Rajesh Tiwari[2], Bhaskar Koriginja[3] and Jincy Denny[4]

Bharat Institute of Engineering and Technology India [1,2,3,4]

Abstract

Website is a very interesting phenomenon on the Internet. It attracts almost everyone as it can be viewed and used just by sitting in one place and exploring the many facets of information. That is the reason every institute whether for profit or non-profit establishes an online channel in the form of a website to manifest its significance both online and offline. Unfortunately, today the very purpose of the www on the Internet is abused by so many cybercriminals and their accomplices. By our many observations and website browsing and navigation experiences, we felt the need to assess any website and to approve/disapprove the special identification given to any website that meets certain operational standards. In this paper, we proposed a policy and a method to be adopted by Website-Standards Approval Body (WSAB) in order to assess the websites for approval/disapproval. This method is based on improving a parameter called Value-Identifier (VI) that is computed on the basis of certain important factors which are applied onto any website. We followed an empirical approach to assess the effectiveness of our method by following the operational standards to a set of 4 websites known to us. The improvement in the VI value is demonstrated by two of these operational-standard websites against the other two nonoperational-standards websites.

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ICICE2021-019

Flexible Electronics: Review on its fabrication process and its Future

Aenakshi Sircar

Banasthali VIdyapith India

Abstract

Flexible electronics is an emerging technology in the fields of electronics.Wide ranges of its application have increased its demand exponentially.Various manufacturing techniques are used to fabricate these circuits according to our needs.These circuits are designed using Thin Film Transistors (TFTs). These TFTs are built on a substrate and thus the substrate forms the basis of flexible electronics.Batch processing, Roll to roll processing are some of the methods for the fabrication of these flexible substrates.Liquid metal alloys are also being used to fabricate flexible circuits. However,this procedure has its own drawbacks. . The following gives a review of the different kind of materials like polymer, glass and metal foil that are being used as a substrate and the various methods to manufacture a fully finished flexible electronic circuit its application and also the possible changes in these technologies in the coming future.

ICICE2021-020

Optical Communication Engineering Simulation Laboratory for effective Undergraduate Education during Era of Covid19

Shailesh Khant1, Atul Patel2 and Pravin Prajapati3

CMPICA, Charusat University India1,CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY India2,

A D Patel Institute of Technology India3

Abstract

Coronavirus pandemic COVID19 has greatly affected the education sector. All academics institutes have to shut off face to face classroom teaching and learning. Engineering education, where there is a need to understand more of the practical concepts using costly hardware is greatly affected. One such engineering course, which involves this type of hardware and requires practical understanding is optical communication engineering. This paper describes how effectively this course will be taught from home using simulation tool. OPTSIM 5.0TM simulation tool is used to simulate all basic and advanced optical systems. Various optical systems and experiments such as Optical receiver, Optical Transmitter, Optical Fiber amplifiers, Optical MUX, Optical De-MUX etc. can be designed for various fiber parameters and performance is measured using BER analyzer, Eye diagram analyzer, Optical Monitor, spectrum analyzer etc. This paper also describes how effectively the benefits of optical system and its performance using OPTSIM 5.0TM software will be taught in the virtual environment of teaching and learning.

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ICICE2021-021

Electrical Energy Consumption model for Monitoring, Controlling and Management of Energy using Internet of Things

Manan Patel[1] and Shailesh Khant [2]

CMPICA, Charusat University India [1,2]

Abstract

Increasing cost and demand for energy is imposing us to find smart ways to save energy. To satisfy the requirement of more energy and more cost cutting we have to monitor and control the usage of energy. Energy consumption can be managed and controlled by various types of methods. In this paper concept of Internet of Things is used. IOT based Energy Management system model is developed. In this system the data module collects data of energy consumption from each connected device and transmits it to cloud for further processing and analysis. After monitoring energy the energy consumption is calculated and based on that energy usage is analyzed and monitored.

ICICE2021-022

IoT enabled smart hospital management for covid patients

Abhishek Singh[1], Anil Kumar Sahu[2] and Papiya Dutta[3]

Variable Energy Cyclotron Centre, Kolkata India [1],Bharat Institute of Engineering and Technology, Hyderabad India[2,3]

Abstract

The hospital management system in rural areas lacks the proper treatment due to demand of efficient doctors and health care persons. Also, in this situation of COVID-19 pandemic, common people are facing problems in health check up facilities. As per the latest report india has the doctor to patient ratio which is much below the recommended by the WHO. As per WHO guidelines, there should be one doctor for every 1000 patients, in health care environments. India has a ratio of 1:1445 as per the latest records. Also, as per rules PPE kits are essential for the health care persons to handle the corona patients. India still faces the shortage of these PPE kits, which are needed to be manufactured by the Indian ordnanace factories. To address this issue, an IoT based system has been developed, which could aid in overcoming the doctors shortage in health care environments. The IoT system is a wearable device to be weared by the patient, which could monitor the pulse rate, temperature and SpO2 levels of the concerned patient. The data could be send to the cloud to be stored in any IoT server like Thingspeak or any other IoT servers.

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ICICE2021-024

Survey on Automated Answer Script Valuation Techniques Using AI and Blockchain

Adithyan K. S.[1], Angel Shaju[2], Maria Francis[3], Siril Siju[4] and Nikhil Samuel[5]

Christ College of Enginering India[1,2,3,4,5]

Abstract

Evaluation of answer scripts is a hectic and time-consuming process. The current system of conducting examinations suffers extreme cases of score manipulation in databases either by students or external security. Moreover, since it is a centralized evaluation, there are chances of biased valuation, also leading to scoring manipulation. We propose a decentralized system for better evaluation and maintenance of examination records such that the records are more credible, reliable, and secure than the current system. The evaluation systems are based on NLP and the whole system is enclosed in a Hyperledger Sawtooth blockchain. The answer sheets are taken in an image format and undergo Text extraction, Summarization, Similarity Measuring, and Grading. Biased evaluation can be completely avoided due to automated evaluation. Tampering with the answer scripts and marks are also not possible since complex hashing is used to sign the system.

ICfICE2021-025

Artificial Intelligence and IoT based Smart Irrigation system Model for Precision Farming

Hetal Patel[1], Shailesh Khant[2] and Atul Patel[3]

CMPICA[1],CMPICA Charusat University[2], CHAROTAR UNIVERSITY OF SCIENCE AND TECHNOLOGY[3]

Abstract

Applications of the AI and IOT technology needs to be employed to the all phase of agriculture for precision farming implementation. It needs to be precision agriculture rather than traditional as optimization of the resources give the benefit to the farmers and ultimately affect to the GDP of the country positively. The crop production must be increase as the demand is high and production is low. Here, in this paper, the model and framework are proposed for the irrigation system. The objective is to save the water and supply it to the crop only when it is actually required. The IoT with the artificial intelligence technologies are adopted to control the irrigation system using smart phone. The moisture level of soil is detected and stored using various sensors which are spread over the farm. The aim is to automate the irrigation system for the crop.

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ICICE2021-026

Iris based Diabetic Detection Techniques using Machine Learning

Deepshikha Gupta[1], Aman Jatain[2] and Sarika Chaudhary[3]

Amity University, Haryana India [1,2,3]

Abstract

Diabetic Retinopathy is an eye disease affecting hundreds of thousands of diabetes sufferers globally. Diabetic Retinopathy is a systemic pathology, one that takes place because of issues inside the insulin levels of the body frame. Glucose intolerance severely affects the blood circulatory community, along with the micro-vascular structure of the retina, in which broken vessels dump undesirable liquids into it. Early detection is vital and if no longer detected and treated in time, DR effects in partial to total blindness in a high percent of anyone with diabetes, globally. This assessment is a try at a rundown of diverse image processing algorithms and structures hired for the recognition of those retinal pathologies. Most of the algorithms are sharpened in for a goal set of sufferers, so abstraction amongst those is not easy. It is likewise exhibited that the extraction of functions of these pathology detection algorithms has improved so much so that their performance now competes human expert levels prognosis. Machine learning (ML) is a computational technique of computerized gaining knowledge and improves the overall performance to make extra correct predictions. Most researchers utilize ML techniques for overall improved insights, these machine learning algorithms includes KNN, Naive Bayes, Decision Tree, Random Forest, Support Vector Machine, etc, and these techniques are used for datasets analysis.

ICICE2021-027

POWER GENERATION USING SOUND BY PIEZO ELECTRIC MATERIAL

Chaithanya D J

VidyaVardhaka College of Engineering India

Abstract

Pollution in an environment is a big difficulty that all the countries are facing everywhere in the world. According to the law of conservation of energy states that energy can neither be created nor be destroyed but it can be converted from one form to another form of energy. Being related to the environment, sudden increase in the growth of urban and industrial side has been concluded in huge quantities of potentially harmful waste. The sound is of mechanical energy form and can be converted into electrical energy through many approaching methods includes heating by using of piezoelectric material and diaphragm. Some noises cannot be restricted such as traffic, noises at market, industries, railway stations etc. and those unwanted noise can be used for generation of electricity. By this method we can reduce energy consumption of piezoelectric and electrical energy which is made of crystalline structure material in which its direct convert from mechanical to electrical energy. The extensive use of this area to focus how we can add performance of electricity formed by conversion of sound energy from non-renewable sources. When sound vibration is on diaphragm then stressed and strain so that converted into electrical energy.

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ICICE2021-028

Intelligence Monitoring And Assessment System Using IOT , AI & ML

Nilesh Deotale1, Akshay Toshniwal2, Darshan Shewale 3,Shivling Kharade4, and Amar Sayyad 5

G H Raisoni Institute of Engineering and Technology Pune India 1,2,3,4,5

Abstract

Performance Analysis System is an emerging field and is very important for companies. These days it is also very important for schools and universities to help students, and their professors improve their performance. Many Related methods are based on past student academic performance. As attendance plays a major role in education that takes up more time for teachers instead of focusing on real education, more time is spent on catch-up. In Real-Time Face Detection which will make the standard classroom a Smart Classroom where the faces of the students are identified by their markers. This will reduce the teacher burden, and the main goal of teaching will be carried out without interruption. Attendance is not the only factor in which a learner's complete assessment can be done and it depends on how well the student is paying attention in class. A complete assessment tool that will focus on quality study and that will make the classroom a real smart one.

ICICE2021-029

Identification and Classification of Fungi Affected Apple leaf diseases using Convolution Neural Network

Sukanya S Gaikwad and Mallikarjun Hangarge

Abstract

The goal of this paper is to identify and classify four types of fungi that affected apple leaf diseases, which include apple scab, apple rust, apple black rot, and a healthy leaf of apple. The dataset is collected from Plant Pathology which consists of 12384 images. Among them, 9908 are used for training and 2476 are used for testing. To the best of our knowledge, we are the first to work on this dataset. The proposed CNN based model identifies and classifies the apple leaves into these four categories. This model can successfully detect and classify diseases with an accuracy of 63%.

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ICICE2021-030

Design of Ultra-efficient Ripple Carry Adders in Quantum-dot Cellular Automata

Seyed-Sajad Ahmadpour, Mohammad Mosleh, Ali Newaz Bahar, Mojtaba Noorallahzadeh, Neeraj Kumar Misra, Papiya Dutta and Bibhash Sen

Abstract

A quantum-dot cellular automaton (QCA) is considered as a top applicant for Nano-scale technologies with unique features including very low occupancy and ultra-low energy consumption. The present research aims at introducing a novel 3-input XOR gate containing 15 cells. Then, an optimal coplanar full-adder containing 18 cells is devised in QCA technology using the proposed XOR gate. Then, 4, 8, 16, and 32-bit ripple carry adder (RCA) is designed via the suggested full-adder. The comparison results of the proposed single-bit full adder with the best multi-layer and coplanar ones show 37.93% and 18.18% reduction of cells, respectively. QCADesigner 2.0.03 tool was applied to assess the simulation results. The power consumption of the presented structure was checked via the QCAPro simulator. In addition, some physical proofs were provided to confirm the results.

ICICE2021-031

General Evaluation of Dermis Sores Identification using MOR-WAVELET Transforms

Chennaboina Kranthi Rekha

Bharat Institute of Engineering and Technology India

Abstract

Dermis Canker detection is one of the significant image processing approach utilized in finding the Dermis sores, for example, malignancy and other pigmented sores. Because of the trouble and subjectivity of human understanding, mechanized examination of dermoscopy pictures has become a significant exploration territory. One of the most significant strides in dermoscopy picture investigation is the mechanized discovery of sore outskirts. In this paper we propose a novel approach for fringe recognition of sores in dermoscopy pictures. To begin with, the shading input picture is changed over into a dim level picture. At that point, the wavelet coefficients of dark level picture are determined. The wavelet coefficients are adjusted utilizing inclination of each wavelet band and a nonlinear capacity. The upgraded picture is acquired from the opposite wavelet change of altered coefficients. Morphology administrators are utilized to fragment the picture; lastly the injury is distinguished by a mechanized calculation. The outcomes show that the proposed technique has a low rate fringe error in a greater part of Dermis injuries.

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ICICE2021-032

Intelligent Spectacles for Accident Prevention

Shrikant Sonekar1, Abhishek Barve2, Harshal Bhoyar3, Gaurav Habad4, Kruti Sontakke5 and Gaurav Kshirsagar6

J D College of Engineering and Management, Nagpur India 1,2,3,4,5,6

Abstract

As development in this era is increasing rapidly, technological advancements are becoming an integral part of humans. Road accidents are increasing every day. It can be reduced to some extent with Intelligent Spectacles. The intelligent spectacles are designed that use the deep learning approach to enhance the captured images and process only necessary information. This paper presents a brief overview of how such intelligent spectacles can be implemented with the technologies available today. Machine learning applications like Object Detection, Speech Recognition, or Web Automation can be used to build a multifunctional Intelligent Spectacle with only Accident Prevention in mind. These Spectacles are wearable devices that can interact with the user via voice, detect objects in front, keep the user updated with the latest weather or traffic updates, and help in navigation. It can reduce the accident rates and also overcome the difficulty incurred in previous glasses. We are proposing a potential direction of creating a product by combining various inputs.

ICICE2021-034

Multiple-Length Coding Scheme

Ashwini Kumar[1] and Raja Dura[2]

JUIT India [1,2]

Abstract

A linear code $\mathcal{C}(n, k, d)$ defined over a finite field $\mathbb{F}_{q^{n}}$ is conventionally designed to encode a k-length q^{n}-ary user message into a codeword of length n for transmission over a q^n-ary channel - resulting in fixed-length coding. Opposed to this, the present work proposes a coding scheme capable of handling variable-length codewords by considering ℓ constituent codes $\mathcal{C}_{n_1 k_1}(n_1,~k_1), \mathcal{C}_{n_2 k_2}(n_2,~k_2), \ldots, \mathcal{C}_{n_\ell k_\ell}(n_\ell,~k_\ell)$, defined respectively over the base fields $\mathbb{F}_{p^{n_1}}, \mathbb{F}_{p^{n_2}}, \ldots, \mathbb{F}_{p^{n_\ell}}$. A multiple-length code $\mathcal{C}_{\rm ML}\big(\sum n_i, k, d \big)$ over the composite field $ \mathbb{F}_{{(p^{\max{n_i}})}^{\sum n_i}} $ is constructed for handling the p^{n_i}-ary codewords of varying lengths $n_1, n_2, \ldots, n_\ell$. The proposed coding scheme encodes k blocks each composed of ℓ segments; wherein each segment is the p^{n_i}-ary n_i-length codeword obtained by encoding the user message of length k_i through the k_i-dimensional constituent code $\mathcal{C}_{n_i k_i}(n_i,~k_i)$, for $i = 1, 2, \ldots \ell$. The proposed multiple-length codes are also equipped with an associated in-built decoding scheme. The working of multiple-length codes is demonstrated with the help of an example.

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ICICE2021-035

E-Commerce Based Recommender System for Product Recommendation Using Machine Learning

Vishal Paranjape[1], Neelu Nihalani[2], Nishchol Mishra[3]

RGPV, Bhopal ,India

Abstract

Recommendation systems are a subset of knowledge filtering systems used to predict the 'assessment' or 'preference' to be fed to an object by the user. Every day, millions of people interact with online services, such as personalized films, news and product recommendation services, that adopt recommendation systems. Building a recommendation system for products such as Amazon.com on an e-commerce platform. Filpkart uses various recommendation models to offer various recommendations to different users on online e-commerce websites such as Amazon. On the basis of ratings given by the user for similar items they are grouped into similar category and then we combine all those items into user's recommendation list. The present paper uses machine learning technique for developing popularity based model for item recommendation and our recommendation model uses Amazon's electronics products dataset and we are using SVD technique for matrix decomposition in our proposed work. Also we have calculated the Root Mean Square Error (RMSE) of our proposed system. E-commerce systems have been using the Recommender method extensively in recent years. Generally, music, news, books, research papers, and products are possibly the most popular e-commerce sites. Recommender systems are also available for business experts, restaurants, financial services, life insurance etc.

ICICE2021-036

Statistical evaluation of application specific image segmentation algorithms

Manisha Bhagwat[1] , Dr.Preeti Singla[2] and Dr.Asha Ambhaikar[3]

RCERT [1], Kalinga university [2,3] India

Abstract

Image segmentation has been an area of interest for many researchers due to its ease of visual representation. Same segmentation algorithms work differently for different applications, which makes them widely applicable. For instance, the same kMeans algorithm produces unique and efficient results when applied to areas like plant disease segmentation,medical resonance imaging (MRI), breast cancer detection, etc. A segmentation algorithm is said to be effective if the extracted regions of interest (ROI) match the expected regions of interest. A difference between the expected and the extracted ROI images is termed as minimum mean squared error (MMSE). This MMSE must be minimized in order to improve efficiency of the segmentation algorithm. In order to reduce MMSE various algorithms have been proposed by researchers over the years, the performance of these algorithm is heavily dependent on the application context. Modern day imaging systems can work effectively only if a hybrid combination of these algorithms is used. Thus, it is becoming increasingly difficult for researchers and imaging system designers to select highly effective application specific segmentation algorithms for their deployments. In order to solve this issue, this text reviews various state-of-the-art image segmentation algorithms and compares them in terms of statistical parameters like MMSE, peak signal to noise ratio (PSNR), delay of segmentation, etc. This will assist researchers and imaging system designers to select best algorithms for their given applications, and thereby reduce the time needed to design these systems. This will also assist designers to further enhance the system performance by selecting application specific image segmentation algorithms.

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ICICE2021-037

Text- Independent Speaker Identification Using Gaussian Super vector SVM-A Review

Dr. Amit Agrawal[1] and Rajesh Nagar[2]

BIET Hyderabad India[1], SAGE University Indore India[2]

Abstract

This paper presents an overview of a state-of-the-art text-independent speaker Identifi- cation system. First, an introduction proposes a modular scheme of the training and test phases of a speaker verification system .Then we discuss about Feature Extraction [8] .It is used to reduce the dimensionality of the input vector while maintaining the discriminating power of signal. After this Gaussian mixture modeling is discussed ,which is the speaker modeling technique used in most systems .Vector Quantization Process [2] is also discussed and then paper highlights on Supervectors . A few speaker modeling alternatives, namely, neural networks and support vector machines, are mentioned. Most recent technique to solve the Speaker Verification System is to combine GMM with SVM .So GMM Supervector [3] is also discussed. Then, some applications of speaker verification are proposed, including on-site applications, remote applications, applications relative to structuring audio information, and games [4]. This paper concludes by giving a few research trends in speaker verification for the next couple of years.

ICICE2021-038

Machine learning and feature selection for predicting chronic kidney disease

Githmi Thilakarathna

University of Kelaniya Sri Lanka

Abstract

Chronic Kidney Disease is a worldwide public health problem, with adverse outcomes of kidney failure, cardiovascular disease, and premature death. The progression rate of the disease can be reduced by early diagnosis and proper medical handling. Machine learning algorithms have been successfully applied in biomedical fields due to high accuracy rates. The use of correct feature selection algorithms will improve the classification accuracy by reducing the dimensions of data. In this study, the Naive Bayes algorithm was used for the classification of Chronic Kidney Disease. The wrapper approach and filter approach were chosen to reduce the dimension of the Chronic Kidney Disease dataset. In the wrapper approach, wrapper subset evaluator with greedy stepwise search engine and classifier subset evaluator with Best First search engine was used. In the filter approach, relief attribute evaluator with ranker search engine and filter subset evaluator with genetic search engine was used. The wrapper subset evaluator with the greedy stepwise search engine feature selection method has shown the higher accuracy rate (99%) with Naive Bayes classifier in the diagnosis of Chronic Kidney Disease compared to other selected methods.

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ICICE2021-039

Study and Analysis of Microstrip Patch Antenna Parameters for Wireless Applications in Ultra Wide Band (UWB): A Review

Rajesh Kumar Nagar1 and Dr. Sudhir Agrawal2

SAGE University, Indore India1,2

Abstract

In wireless application over ultra wideband (UWB) frequency range Microstrip Patch Antenna becomes favorite among different antenna designs. It is compatible to antenna designers due to its planner profile and versatility, easy to fabricate, and compatible with different shaped surfaces. Microstrip patch Antenna (MPA) mostly used in all wireless communication due to its low profile. In this paper we study different types of patches used for the design of Microstrip antennas and compare with their characteristics accordingly their applications in wireless application for UWB frequency range.

ICICE2021-040

Chemoinformatics: A Testing Ground for Predicting the Performance of Qualitative and Quantitative Methods in Diels-Alder Reactions

Gaddamanugu Gayatri

Bharat Institute of Engineering and Technology India

Abstract

Chemoinformatics is one of the emerging and thrust areas in finding the right solutions to the unsolved problems when a vast set of data is generated. The purpose of the current study is to analyze the huge data set generated considering a wide range of possible combinations on a large number of hetero Diels-Alder reactions. An exhaustive and systematic computational study on these data sets has been executed. Testing the reliability of any quantitative or qualitative approach requires the application of different computational methods on a large number of compounds. The properties such as asynchronicity and singlet-triplet energy gaps are computed to understand the stability of the products. The rmsd values are considered to corroborate the predicted performance of these measures. All the transition states are asynchronous with the asynchronicity ranging from 0.01 to 1.18 Å. In general head-to-head arrangement is observed to be less asynchronous compared to head-to-tail arrangement in case of dienophiles NE, PE, OE and SE. However in case of dienophiles AE, OHE, MeE and CNE head-to-head arrangement is observed to be more asynchronous. syn isomer is found to be more asynchronous than the anti isomer. In transition states (TS) where acroline is the dienophile, favorable secondary orbital interactions operate to facilitate the regioselectivity. To estimate how the activation energies can be predicted using simple measure, correlations are drawn with the singlet-triplet energy gaps of the dienes and the dienophiles, reaction energies, HOMO_diene-LUMO_dienophile and LUMO_diene-HOMO_dienophile.

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ICICE2021-041

DESIGN REMOTE HEALTHCARE MONITORING SYSTEM FOR HYPERTENSIVE PATIENT BASED ON IOT

Kajal Mankar1, Prafulla Gawande2 and Ajay Gawande3

sipna college of engineering and technology amravati India1,2,3

Abstract

Recent technological advances and Internet availability make it possible to connect various devices which can communicate and share data with each other. The Internet of Things (IoT) is a new concept which enables users to connect various sensors and smart devices to collect data from the environment in real time. In this paper proposed low cost and easy to use remote healthcare monitoring system for hypertensive patients based on IoT. A bio-signal sensor and a microcontroller are the major components of the system. The data has been collected by the bio-signal sensor and are transmitted to an intelligent server. The IoT system is able to monitor the location of the patient. The proposed system consists of a body sensor network that is used to measure and collect Physiological data of patient. In case of emergency situation the caretaker and doctor are intimated through short message service for providing adequate help.

ICICE2021-042

Engineered Graphene Quantum Dots Can Be Useful For Metal Ion Sensing

Dr. Suprabhat Sarkar

Bharat Institute of Engineering and Technology India

Abstract

Fluorescent carbon nanomaterials are drawing tremendous attention in recent years due to some of their exceptional properties such as ease of synthesis, high chemical stability, tunable optical properties, and low toxicity. Among these materials, the iconic graphene quantum dots (GQD) is a gem in the carbon family which have the potential to replace the hazardous semiconductor quantum dots (CdS, CdSe, CdTe, PbS, etc.) in various applications viz. bioimaging, solar cells, metal ions sensing/detection. Moreover, tuning the properties of GQD can be an important tool for these applications. In this work, heteroatom doped GQD have been synthesized by a two-step method for metal-ion sensing. Initially, GQD have been synthesized via sonication-assisted liquid exfoliation method from graphite powder followed by heteroatom doping (N) and co-doping (N, S) using the hydrothermal treatment. The prepared GQD and heteroatoms doped GQD have been characterized by various techniques viz. UV-Vis, FTIR, PL, SEM, and TEM. We have also checked the level of heteroatom doping on the optical properties of doped GQD. When these doped GQD have been employed for metal ion sensing application, it can be observed that the doped GQD undergo photoluminescence quenching in presence of Fe3+. The amount of quenching depends on the concentration of Fe3+.

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ICICE2021-043

SODARA "SWEAT ODOR DETECTOR" ARTIFICIAL INTELLIGENCE THAT FUNCTIONS FOR EARLY DETECTION AND TRACING TOOLS IN COVID-19 PATIENTS USING SWEATING

Mohamad Arifin1 and Anisa Janatin2

airlangga university Indonesia 1,2

Abstract

The spread of covid-19 which started in the city of Wuhan China is very fast in all cities around the world which has made a global pandemic, this virus spreads with various media, including: touch or interaction between individuals, fluids that come out of body parts, one of which is saliva and sneezing from nose. With the clinical symptoms felt by sufferers of Covid-19 such as fever, shortness of breath, sore throat as well as a fairly high accuracy detection method for this virus so far using the PCR Polymerase Chain Reaction laboratory test which takes a sample of nasopharyngeal fluid in the patient's nose which causes discomfort to the patient when sampling, there is another method to detect the Covid-19 virus by using the smell of sweat. In which patients who are confirmed that Covid-19 have a distinctive smell of sweat compared to patients with negative results of Covid-19, this method has proven effective in detecting patients with positive confirmation of Covid-19 who were tested using the sense of smell of dogs which have a high level of acuity in detecting patients. covid-19. By adopting this concept using artificial intelligence in the form of a smell sensor that is able to detect Covid-19 and non-Covid-19 patients by working when the user enters the airtight room the sensor system will work automatically to analyze the smell of sweat that the user produces. If the user is confirmed covid-19, the alarm system will turn on automatically, otherwise if the patient is not positive, the alarm system will not turn on. The output to be generated from the covid-19 detection method using a smell sensor can provide fast results with high accuracy.

ICICE2021-044

Incidence Rates and State Wise Risk Prediction of Novel Corona Virus (COVID-19) using Artificial Neural Networks

Ameensaheb Shaik1 and Togercheti Deepthi2

KG Reddy College of Engineering India1,Bharat Institute of Engineering and Technology India2

Abstract

Novel Corona virus (nCoV) is a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). It is a new strain that has not been previously identified in humans. Common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death. Standard recommendations to prevent infection spread include regular hand washing, covering mouth and nose when coughing and sneezing and maintaining personal hygiene and avoiding close contact with anyone showing

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symptoms of respiratory illness such as coughing and sneezing. As on 24th November 2020, total number of cases in Telangana state is 265049, in these active cases are 11047, death cases 1437 have been reported in World Health Organization (WHO). Artificial intelligence algorithms are increasingly integrating the ability to identify these key emotions and produce insights that make prospecting more effective for potential buyers. For example, you have sales data on thousands of customers and the different items they have bought. Without the help of AI algorithms, all you will see is a bunch of complex data, rows after rows, mentioning product codes or names which will not only lead you anywhere but are also highly complex to understand. You need to create a strong analytical platform that is capable of carrying the necessary volume of data along with handling the diversity of each data set. The most successful companies use multiple data sources to collect information including structured, unstructured, text-based, machine or IoT (Internet of Things) data. In this paper, we made an attempt to predict the incidence rates and state wise risk of nCOV using Artificial Neural Networks.

ICICE2021-045

Open Defect Fault Analysis in Single Cell SRAM Using R, and C Parasitic Extraction Method

Venkatesham Maddela[1], Dr. Sanjeet K Sinha[2] and Dr.Parvathi Muddapu[3]

BVRIT HYDERABAD College of Engineering for Women India [1,3] and Lovely Professional University India [2]

Abstract

As the technology changes from Submicron to Very Deep Sub Micron (VDSM) it is very difficult to test the SRAM on SOC. This allowing the huge integration dense causes the unwanted interconnections and disjunctions. This may create several defects in the memory layout which causes several memory faults within the cell. From the past literature, it is observed that many of the fault models are analyzed using several March algorithms such as March C to March 22N. These algorithms are predominant in detection information rather than location. As the technology scaling is increasing, the device density is more prone to parasitic effects that lead to some form of undetectable faults. However the existing test methods are not adequate to identify such undetectable faults. In this paper we propose a new fault model taking parasitic effects into consideration, to detect the faults along with fault location. The proposed method in this paper is considered node-to -node open defects at the circuit level using 120nm technology. Test results observed with few existing faults like Undefined Sate Faults (USF), Transition Faults (TF), Undefined Read Faults (URF), Undefined Write Faults (UWF), Incorrect Read Faults (IRF), Incorrect Write Faults (IWF) and No Access Faults (NAF). In addition to these, few more undetectable faults also observed at the locations of transistor M1 drain to node Q. These faults can easily be identified using proposed parasitic extraction method with observed R value of 3.7 kΩ and C value of 4.7fF. Similarly, other undetectable faults observed at nodes M2 drain and Q with corresponding R value of 4.14kΩ and C value of 5.1fF. Other one more fault undetectable fault observed at gate of M2 and node QB with correspond R value at node QB is 3.73kΩ and C is 6.49fF.

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ICICE2021-046

JATAYU

Aagam Sheth1 and Janvi Sharma[2]

CMPICA ,CHARUSAT India [1,2]

Abstract

Jatayu, the UAS(Unmanned ariel system) or UAV (Unmanned Arial Vehicle), (or unscrewed aerial vehicle, commonly known as a drone) is an aircraft without a human pilot onboard and a type of unmanned vehicle. This project focuses on the objective of surveillance, monitoring, helping the defense forces to carry out various missions by providing real-time intel. Jatayu can also be armed if needed for counter-attacks, this can decide by itself when there is a failure of any component or any other thing. With its good maneuverability, it provides good marine time security also gives various real-time details with the various cameras and sensors onboard. The design of various UAVs varies by the field of the work and cannot work if the environment changes, but with this design, inspired from HAL Tejas MK2 this can fly in any condition and gives the bird's eye view. JATAYU is powered by Raspberry Pi which is the central control unit through which JATAYU will function. JATAYU also contains a camera which features night vision and thermal which are pretty much necessary for defense purpose. The two primary flaps and one rudder which consists of an antenna will control the direction of JATAYU, following the command passed on by the main servo control unit. In general, Raspberry Pi will be main flight control, the speed of the engine will be controlled by the special made command/control unit and servo motor which does all the spoilers and rudder movements will also be controlled by the special made command/control unit.

ICICE2021-047

COMPARATIVE ANALYSIS OF SOLAR MPPT TECHNIQUES

Tulasi

Bharat Institute Of Engineering And Technology ,HYD, India

Abstract

Solar photovoltaic (PV) energy system is one of the best technologies among the all renewable energy sources because it is having advantages like clean, noise free and available in large quantities most important it is environmental friendly. To operate the solar (PV) with maximum efficiency, need some techniques. Those are called Maximum power point tracking (MPPT) techniques. These techniques improve the performance, efficiency and flexibility of solar energy system. MPPT'S are classified according to there method of operation as 1) conventional methods 2) soft computing methods. In this paper a detailed principle and operation of some of the conventional and soft computing techniques are explained. Finally the comparative analyses of the methods are done.

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ICICE2021-048

Synthesis and photoluminescence Studies of CdS/PVK Nanocomposites

Durgesh Nandini Nagwanshi 1and Ruchi Nigam 2

Jabalpur Engineering College, Jabalpur (M.P.) India 1,2

Abstract

cadmium sulfide (CdS) is excellent materials for optoelectronic applications. It is interesting to investigate their optical properties at nanometer regime where the properties become size dependent [1-3]. Presently photoluminescence of CdS/PVK nanocomposites have been reported. The nanocomposites have been successfully prepared by chemical method. The samples were characterized by XRD UV-Vis absorption and photoluminescence. The XRD study shows formation of CdS nanocrystals with cubic zinc blend crystal structure, having three peaks corresponding to (111), (220) and (311) planes. The crystal size computed by Debye Scherrer's formula is in the range of 3 to 12 nm. The results from XRD studies show increase in particle size, by increasing the CdS concentration in PVK. The optical absorption spectra of the nanocomposites show blue shifted absorption edge as compared to bulk indicating increased band gap due to quantum confinement effect. The absorption edge is found to shift towards higher wavelength indicating decrease in band gap with increasing CdS concentration, which indicates increase in particle size. The photoluminescence (PL) of PVK excited at 400 nm shows PL single peak at 451 nm and covers the spectral range from 400 to 600 nm. The CdS nanocrystals give single peak at 530 nm when excited separately by 400 nm. In CdS/PVK nanocomposites two PL peaks are obtained, first peak due to PVK near 450 nm and second peak due to CdS near 530 nm.PL intensity decreases with increasing concentration of CdS in PVK.

ICICE2021-049

Simultaneous scheduling of machines and tools in multimachine flexible manufacturing system with alternate machines using Jaya algorithm

Maruthi Prasad Mannevaram[1] and K Prahlada Rao[2]

Annamacharya Institute of Technology and Sciences India [1],NTUCEA India [2]

Abstract

This article deals with simultaneous scheduling of machines and tools in a multimachine flexible manufacturing system to generate best optimal sequences that minimise makespan. As flexible manufacturing system (FMS) is an integrated manufacturing facility, simultaneous scheduling of different components of FMS is essential. Scheduling of flexible manufacturing systems is a well-known NP-hard problem which is very complex, due to additional considerations like material handling, alternative routing, and alternative machines. The aim of this research work is to address combined machines and tools scheduling with alternative machines for the makespan minimization objective. Jaya algorithm is a powerful parameter less algorithm has been used for solving combined machine and tool problems with makespan as objective.

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ICICE2021-050

Mechanism of Soil Audit for Agriculture Using Arduino

Mubeena Begum

Bharat Institute of Engineering and technology India

Abstract

India is an agricultural country. It ranks second worldwide in farm output. India's population reached beyond 1.2 billion and the population rate is increasing day-by-day; then after 25–30years there will be a serious problem for food, so the development of agriculture is necessary. Today, the farmers are suffering from the lack of rains and scarcity of water[1]. This paper provides an automatic irrigation system and also to check the amount of the three major macronutrients, nitrogen (N), phosphorus (P), and potassium (K), in the soil thereby saving time, money, and power of the farmer. The N, P, and K amounts in the soil sample are determined by comparing the solution with color chart. This will describe the amount of N, P, and K as high, medium, and low. The traditional farm-land techniques require manual intervention[2]. With the automated technology of irrigation the human intervention can be minimized. Whenever there is a change in temperature and humidity of the surroundings, these sensors sense the change in temperature and humidity and give an interrupt signal to ARM 7 Processor, thereby initiating the irrigation. All this functioning will be updated to the user by e-mail sent by the system PC through IoT.

ICICE2021-052

System for prediction of crops for effective yield across crop categories augmented with a chatbot guiding the farmer during crop lifecycle during pandemic situations

Chandu Ravi Teja1, Pilli Sandeep2 and Mubeena Begum3

Bharat Institute of Engineering and technology India 1,2,3

Abstract

In our country, Agriculture plays a vital role and also acts as backbone of the country. Due to lockdown as there were no labor to work, crop ready for harvest may be lost. To overcome this adversity, a machine learning model- Regression technique can be used to predict the crops to be grown based on the existing stock. This can help to plan effective yield across crop categories, rather than growing only one type of crop in abundance. The paper will also be augmented with "Farmer chat bot" to help farmers to guide throughout the life cycle of that crop, weather forecast and geolocation is also augmented with this paper.

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ICICE2021-053

Role of artificial intelligence based teaching & learning in Nation's Success

Dr Purushottam Bhari

Compucom Institute of Information Technology & Management, Jaipur India

Abstract

This paper explores the phenomena of the emergence of the use of artificial intelligence in teaching and learning in higher education. It investigates educational implications of emerging technologies on the way students learn and how institutions teach and evolve. Recent technological advancements and the increasing speed of adopting new technologies in higher education are explored in order to predict the future nature of higher education in a world where artificial intelligence is part of the fabric of our universities. We pinpoint some challenges for institutions of higher education and student learning in the adoption of these technologies for teaching, learning and student support. In India higher education is the growing sector having potential to become as a developed nation in the future. The quality of higher education plays a key role in the entire educational system. Since the nation's success is mainly determined by the quality of higher education it is important to develop the number of strategies in teaching learning process. In this regard, it is essential that new and innovative teaching methods are to be developed. This article mainly focuses on the current scenario of higher education and innovative techniques to be used so as to strengthen the content knowledge for the student. Various teaching systems are focused with a view to increase the overall quality of education systems. Study is done on the Enrollment of students in different courses and their percentages and Gross Enrollment Ratio in higher education in various states in India. Innovative Teaching Methods and use of Artificial Intelligence in Education sector is also discussed.

ICICE2021-055

Early Detection Support Mechanism in Autism Spectrum Disorder using ML Classifier

Dr.Parvathi M1, Ravikanth M2 and Neelakantappa M3

BVRIT HYDERABAD College of Engineering for Women 1,Vishnu Dental College India 2, BVRIT HYDERABAD College of Engineering for Women India3

Abstract

Clinician appraisal of ASD symptoms are considered as standard determining the presence of ASD. According to revised diagnostic criteria of 2013, fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), there are two cores of ASD symptoms that causes social and communication deficits includes restricted, repetitive patterns of behaviors and sensory differences. India has witnessed a paradigm shift in dealing with persons with disabilities over last two decades. Although, there has been raising awareness about ASD among parents and professionals, there is a major gap in identifying ASD at the early stage and for providing correct treatment accordingly. The existing early detection screening tools are time consuming, tedious, exclusive, and cumbersome. Also results in incomplete diagnostic process due to lack of complete evidence on the child behavior. In this work, in order to address these problems, we have used Machine learning Naïve bays classifier in the diagnostic process while categorizing the impact of symptoms on the individual's adaptive functioning. The features of ASD that are usually found in child below three years are taken as inputs to the model and corresponding responses were identified to detect near or perfect autism using Naïve bays classifier. The proposed method is resulted with 73.3% of accuracy in detecting the autism in child.

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ICICE2021-056

Approach to reduce PAPR in Orthogonal Frequency Division Multiplexing Technique

Sakir Ahmed Mondal1, Sagnik Chakraborty2, Subhodeep Mondal3, Raunav Ghosh4, Manidipa Samanta 5 and Piyali Mukherjee6

University of Engineering & Management, Kolkata India 1,2,3,4,5

Abstract

Orthogonal frequency division multiplexing is a very flexible and efficient modulation technique that can be considered as the heart of all major wireless and wired communication standards used as well as in development today. OFDM is a specialised version of FDM that separates the channel bandwidth into multiple narrow band subcarriers in order to transfer information. With the advent of various network demanding technologies such as the Internet of Things (IoT), 5G and many more yet to come various network congesting scenarios are becoming common where noise is observed due to interfering channels arising because of close proximity between the communicating devices. High value of data rates and greater bandwidth are thus very much essential to support the requirements of current and future mobile users. With Orthogonal Frequency Division Multiplexing (OFDM) technique, these parameters are achieved very well as per the requirement of the present day, but at the cost of increased value of Peak-to-Average Power Ratio (PAPR). High PAPR increases the power consumption, thereby reducing the battery life. This paper presents review and analysis of techniques used for PAPR reduction in OFDM. Additionally, the scope and challenges in PAPR reduction has been documented which describes clipping technique to reduce PAPR through simulation models.

ICICE2021-057

Efficient Fault detection of Power Transformer deploying Machine Learning Algorithm along with DGA techniques.

Neeta Ingale[1] and Dr. Papiya Dutta[2]

BHARAT INSTITUTE OF ENGINEERING AND TECHNOLOGY INDIA[1,2]

Abstract

Different methods of DGA have been introduced, in order to detect the faults of transformer for example: IEC, DUVAL Triangles, ROGERS RATIO method etc. The DGA technique was a reliable method for fault detection in transformer, However this technique has some drawbacks like the ratio method predictions are obtained only when the gas ratio value are more than 10 times of the detection limit according to gas chromatography. Methods like DUVAL triangle method predict faults even if the Gas concentrations are within the allowable limit. The most important drawback is the No Decision issue of this Gas ratio method, which is due to the improper prediction of this ratio values. The research paper proposed overcomes this issue associated with the conventional DGA techniques to detect the fault of transformer, AI and ML techniques are being implemented. These AI/ML techniques classify the data from DGA techniques to a proper class of faults to be detected in Transformer. Classification is based on the data set being considered as Training and Testing in AI techniques. With different algorithm the accuracy of the method changes and MLPNN is found to be the most accurate algorithm in fault detection of transformer using DGA technique.

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ICICE2021-058

Model for Prediction of Heart Disease Using Machine Learning Technique

Suriya Begum, Farooq Siddique and Rajesh Tiwari

BIET INDIA1,3 AND Rubiex Technology INDIA 2

Abstract

Everyday, almost one person dies of Heart disease about every minute in India alone. A technique to detect the heart disease should be developed to reduce the number of deaths which is handy and at the same time reliable also. Machine Learning plays an important role in the health care Industry. This paper deals with exploring and investigating different Machine Learning Algorithms. Also, it deals with applying multiple Algorithms on Heart Disease Dataset which is taken from UCI repository. Six models were trained and tested, which are Logistic Regression ,Random Forest Classifier , XGBoost Classifier ,Support Vector Machine Classifier ,Artificial Neural Network Classifier ,K Neighbors Classifier .The machine learning algorithm Random Forest Classifier has proven to be the most accurate and reliable algorithm and hence used in the proposed system.

ICICE2021-059

Fashion E-Commerce using CMS

Vaibhav Aggarwal1, Deeksha2, Shreya Soni3, Kanishka Sharma4 and Vaishali5

Dr. Akhilesh Das Gupta Institute of Technology And Management India [1,2,3,4,5]

Abstract

E-commerce websites are widely used as they are becoming more reliable and also provide easier ways to purchase goods with many numbers of features. There is a huge revolution which has arrived in the purchasing and selling world through E-Commerce. Online shopping, auctions, internet banking, payment gateways and online ticketing are possible with e-commerce. CMS is user-friendly software. It helps to create, manage, and modify the contents in the website without the prior technical knowledge. Content can be updated on a regular basis without changing the actual code. There are many Content Management System (CMS) and e-commerce platforms like Woo-Commerce available due to the growing demand of online selling and purchasing. The aim of this research paper is to have a clarity among the various CMSs available with their pros and cons followed by the explanation of our CMS based website. This research paper discusses the issue that businesses face with the conventional website model. The results reveal that respondents supported the notion of enhancing the capacity of content management.

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ICICE2021-060

MIMO Detection And Precoding using AI Algorithm

Dr Papiya Dutta[1] and Ms.Jvl Ramyasree[2]

Bharat Institute of Engineering and Technology India[1,2]

Abstract

The communication industry is expected to grow continuously and at extreme rates.This includes the productivity of economic sector such as transportation,healthcare,Agriculture,finance,services and consumer electronics and so on.The communication industry is rapidly advancing towards the 5G and Beyond 5G wireless technologies.The upcoming 5G and beyond 5G system aim at connecting tens of billions of wireless devices with the GB/Sec data rates and millisecond level latency.As the existing 3G/4G wireless networks are unable to meet such demands, this paper focuses towards the 5thgeneration and beyond 5G eras.In this paper we develop the state of art of AI -based 5G and B5G technologies of algorithm, implementation and optimization levels.We provide the information and the limitations of AI based solutions and also providing the brief statements of emerging techniques.

ICICE2021-061

Artificial Intelligence Learning Approaches

Surendra Kalagara [1]and D.L.N.Prasunna Prasunna[2]

Bharat Institute of Engineering and Technology India[1,2]

Abstract

Now-a-days artificial intelligence has become an asset for engineering and experimental studies, just like statistics and calculus. Data science is a growing field for researchers and artificial intelligence, machine learning and deep learning are roots of it. This paper describes the relation between these roots of data science. There is a need of machine learning if any kind of analysis is to be performed. This study describes machine learning from the scratch. It also focuses on Deep Learning. Deep learning can also be known as new trend of machine learning. This paper gives a light on basic architecture of Deep learning. A comparative study of machine learning and deep learning is also given in the paper and allows researcher to have a broad view on these techniques so that they can understand which one will be preferable solution for a particular problem.

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ICICE2021-062

Wireless charging of energy using magnetic coupling method to replenish energy of sensor nodes in wireless sensor networks

Khaleel Ullah Khan

Bharat Institute of Engineering and Technology India

Abstract

Transferring of energy using the concept of magnetic resonant coupling for wireless recharging of nodes in the wireless sensor network (WSN) is an energy efficient and effective ,modern method to avoid dead nodes in the network and increase the efficiency of the network. The problem of scalability arises when the nodes are charged simultaneously in the network. But using the magnetic coupling resonant process, we proposed, the scalability of the nodes is considerably increased. In this paper, we have used the concepts of multi node energy transfer methods and efficient recharging of the nodes to avoid energy issues in the network. A wireless recharging moving mechanism (WRMM) is designed which moves in the side wireless sensor network at regular interval of time and supplies the charge to the nodes wirelessly. To have a coverage of the range of all the nodes present in the WSN, a cellular like structure is proposed with hexagonal shaped cells in the network such that WRMM can cover transfer of energy in every corner in omni-direction and have lesser dead points. We developed an algorithm of selective optimization method by combining traversed route, systematic flow routing and amount of time required for charging of the WRMM. By using discretization and upgraded Reformulation-Linearization Technique (RLT), we designed a method for charging of nodes to get an optimal solution for the energy recharging. The proposed method is a better solution compared to those other existing methods for wireless charging of nodes in wireless sensor networks.

ICICE2021-063

7TH SENSE:MULTIPURPOSE ROBOT FOR MILITARY

Deepika[1], P. Rohith[2], K. Sridhar[3], A. Chandan[4] and Dr. Amit Agrawal[5]

Bharat Institute of Engineering and Technology India[1,2,3,4,5]

Abstract

Main purpose of this work is to built a system that can be used for various military purposes. Our robot can be used for bomb detection, fire, smoke, temperature. The system has two modes in which the robot gets controlled. For controlling the robot two modes are used here. The first mode being automatic whiles the other mode being manual. In the automatic mode the robot will continuously keep on detecting objects and if an intruder is found it will shoot them. Decisions are taken by the robot according to the sensor reading. While in manual mode the robot will be in work as per the user controls it. The robot continuously monitors and if it senses something, it will indicate it through buzzer. The manual mode is having full control over the robot. Decisions are taken by the user controlling it.

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ICICE2021-064

ARDUINO BASED LED CHASER

Shashidhar Reddy[1], K. Venkanteshwar Reddy[2], Ch Rahul[3], R. Manjula [4]and Dr. Amit Agrawal[5]

BIET,Hyderabad India[1,2,3,4,5]

Abstract

An LED chaser or sequencer is a popular LED driving circuit. It's used in running-light rope displays to flash different lighting patterns. In a chaser or sequencer circuit, a controller commands the sequence and timing of the flashing LEDs to illuminate different kinds of lighting patterns. This LED chaser is built on Arduino UNO. Arduino is currently the most popular single-board microcontroller. In this sequencer, seven LEDs are interfaced with Arduino to demonstrate 13 different lighting patterns. In fact, it's possible to design an LED chaser with several LEDs by using shift registers. In this LED chaser, LEDs are directly interfaced to Arduino pins since Arduino's GPIO can output forward voltage and the current required to switch them ON/OFF. The LEDs are controlled via the digital output from Arduino. The UNO is programmed to output logical signals with different sequence over its pins with the appropriate timing pattern to show different LED light patterns.

ICICE2021-065

SEGREGATION OF SOLID WASTE USING SENSORS: A SMART SYSTEM FOR WASTE MANAGEMENT

Jyoti Patil Devaji[1], Musadiq Alam[2] and Nalini C Iyer[3]

KLE Technological University Hubballi India [1,2,3]

Waste management is the most important topic for the present day world owing to its significant environmental uses and economic benefits. Although there are several waste segregation techniques in the waste recycling plants this paper mainly focuses on the segregation of waste before they are sent to the recycling plants. First the previous techniques are discussed for the waste management by referring to the student papers of the several research fellows who have worked on the waste segregation earlier. Later comes our proposed method of segregating the waste using the capacitance and inductive sensors. Using these sensors, the proposed work separates the waste as metal waste, dry waste and wet waste. In the later part of this paper provides the general understanding of the waste management and need for it today for increased population.

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ICICE2021-066

Analysis and Mathematical Modeling of COVID19 Transmission of Corona Virus

Nripendra Narayan Das[1], Prakash Chandra Sharma[2], Gaurav Aggarwal[3] and Rajesh Tiwari[4]

Manipal University Jaipur India[1,2,3] and BIET Hyderabad[4]

Abstract

It was accounted for that the vast majority of the contaminated cases in India have visited some neighborhood refers to before positive affirming their sickness (i.e., seclusion medical clinic, air terminal, eatery, advertise, bistro, clinic, organization, Movie Hall, and so forth). Obviously, a few likely explanations behind spreading coronavirus in India are summed up by numerous scientists in the field. Several investigations were led to locate the plausible reasons of spreading the coronavirus in India as opposed to different nations. Research Scientist have begun to extricate data about the contaminated cases and examined the biomedical data and their clinical narratives to separate the principal parameters that could cause coronavirus spreading. Scientists proposed that the spreading of coronavirus could be associated with sex, birth year, or the district they originate from. In this manuscript, we analyzed transmission of COVID19 Corona Virus in India and then we proposed a mathematical model of it for better analysis.

ICICE2021-067

Gesture Controlled Robot using Arduino

I.Ravi Kumar1, K. Pavan Kalyan2, A. Raju A. Raju3, A. Vamshi Krishna4 and T. Vishal Reddy5

Bharat Institute of Engineering and Technology, Hyderabad India 1,2,3,4,5

Abstract

The GESTURED ROBOT is an electro-mechanical system that is operated by a semi-autonomous or human control through a computer program. This robot is developed using an accelerometer sensor and controller part is ARDUINO Lilypad. The main objective of our project is to create an adoptable robot with a minor economic expenditure and major utility. The gestured controlled robot using an accelerometer is one kind of robot which can be operated by the movement of the hand by placing an accelerometer on it. This project is divided into two parts transmitter device and receiver device. Where a gesture device works as a transmitter device and a robot works as a receiver device. When a transmitting device (accelerometer) is placed on the hand, then it will send signals to the robot for the required operation. This paper proposes a style of hand gestured controlled automaton victimization Arduino Lilypad. The model projected is controlled through a motion device that is mounted on the hand gloves. This style is to manage the automaton victimization hand gesture. a measuring device utilized in the planning senses the direction of hand movement and sends an indication to Arduino Lilypad. Four main Hand gesture movements like FORWARD, BACKWORD, LEFT and RIGHT area unit detected and enforced.

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ICICE2021-068

Multihop Routing and Wavelength Assignment Algorithm for WDM Networks

I.Ravi Kumar and K.Pavan Kalyan

Abstract

A new routing and wavelength assignment method is proposed that increases the possibility of WDM networks being blocked and makes a very good use of network resources. Compared with the conventional RWA algorithms used in WDM networks, this heuristic results in high quality of service, prioritization of LAN networks and lower installation costs. It is based on the algorithm of distributed Dijkstra sparse placement routing, first-fit wavelength reservation, and multiplexing of traffic. During the process of finding the optimum lightpath, we apply load balancing and a sparse electronic switch placement algorithm to reduce the number of dropped lightpath sessions to zero, decrease the number of opaque nodes and optimize network utilization.

ICICE2021-069

Smart Waste Management System for Smart City based on Internet of Things (IoT)

Timothy Malche[1], Pradeep Kumar Tiwari[2], Sumegh Tharewal[3] and Rajesh Tiwari[4]

Manipal University Jaipur India [1,2,3] and Department of Computer Sc & Engg., Bharat Institute of Engg. & Tech. Hyderabad, India[4]

Abstract

The Internet of Things (IoT), an emerging wireless network, is a cohesive part of the future Internet as IoT guarantees that 'things' with identities can communicate with one another. IoT can be applied in various areas such as smart cities, agriculture, energy, environment protection, health, home automation and much more. The IoT is an important catalyst for the connected world where all services are supposed to be available to users as and when required. This study proposes waste management experimental application which can be implemented in smart city. The waste management experiment proposed in this study is a connected system of smart objects, called the smart garbage bin, that enables real-time monitoring, sends automatic notification about the state of garbage to assist an effective waste management.

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ICICE2021-070

An Efficient Parallel Algorithm for finding Bridges in a Dense Graph

Ashwani Kumar1 and Aditya Pratap Singh2

Oyo Rooms India1 and DE Shaw India2

Abstract

This paper presents a simple and efficient approach for find-ing the bridges and failure points in a densely connected network mapped as a graph. The algorithm presented here is a parallel algorithm which works in a distributed environment. The main idea of our algorithm is to generate a sparse certificate for a graph and finds bridges using a simple DSF (Depth First Search). We first decompose the graph into independent and minimal subgraphs using a minimum spanning forest algorithm. To identify the bridges in the graph network, we convert these subgraphs into a single compressed graph and use a DFS approach to find bridges. The approach presented here is optimized for the use cases of dense graphs and gives the time complexity of O(E/M+Vlog (M)), fora given graph G(V,E) running on M machines.

ICICE2021-071

Proximity Coupled Stacked Circular Disc Microstrip Antenna with Improved Cross Polarization Characteristics Using DGS

Pravin Prajapati 1 and Shailesh Khant 2

A D Patel Institute of Technology India [1] and CMPICA, Charusat University india 2

Abstract

In this paper, reduction of an unwanted radiation from the antenna (i.e. cross polarization) using dumbbell shaped circular head defected ground structure in electromagnetic coupled fed double vertical stacked circular disc microstrip antenna (SCDMA) has been presented. Proposed Defected ground structure (DGS) improves cross polarization level by 73 dB in E plane and 5 to 8 dB in H plane as compared to an identical microstrip antenna with normal ground plane. Dumbbell shaped circular head DGS has been applied in pair in the design of antenna, symmetrically located under a lower circular patch and feed. The simulated antenna offers a gain of 6.24 dB at 5.53 GHz center frequency and has bandwidth 5.20 to 5.94 GHz. The bandwidth of the proposed antenna cover two licensed bands of the India, i.e., (5.25-5.85 GHz); (5.725-5.8 GHz). These bands are declared for WLAN and WiMAX applications respectively as per Indian government standards. This paper gives an application of DGS to suppress the cross polarization, which helps antenna designer to design efficient antenna with efficient way.

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ICICE2021-072

Dynamic Automobile Assembly process using IOT

Krishnaveni Bukkapatnam

Bharat Institute of Engg and Technology India

Abstract

In the wake of #AtmanirbharBharat and #MakeInIndia planks, there is a huge thrust to Manufacturing. This paper focuses on the Automobile Manufacturing process, enabling a customizable product, vis a vis a rigid Manufacturing process developed as per Industry 4.0 principles aided by IOT (Internet of Things) tools. The system is based on the Automobile Assembly process, which simulates the whole process of the delivery to every customer through to the Manufacturer. Seamless integration of Networked Production Components is realised by building interfaces between existing ERP systems and MES (Manufacturing Execution Systems). The system adopts M3 - Modular Manufacturing Mode, via Wireless Networks for Industrial Automation - Factory Automation (WIA-FA) and Dynamic Control System, to Manufacture and Maintain Automobile Products at Scale. The proposed approach also improved Production Equipment utilization. Another aspect of this approach is the flexibility of the Production System to enable dynamic modification in the product specification.

ICICE2021-073

Study of Bot as Disinfect Machination

Sungeetha Dakshinamurthy

St.Joseph's Group of Institution India

Abstract

The solution about the construction of a simple, efficient, partly autonomous toilet sanitizing robot.The application of Robotics is increasing in commonplace in day to day applications. This paper provides a brief review on different toilet sanitizing devices and viability of applying these equipments in communal toilets in emerging countries. The paper presents a literature review on different toilet sanitizing equipments, concentrating on different construction and commonly accessible toilet sanitizing robots. The points that restrict these equipments from being used in multi- toilet communal toilet system in emerging countries are explained. This paper also encloses

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ICICE2021-074

Strategies to secure connected cars with firewalls

Ramidi Navya Sree[1], Sowmya Kotagadda[2], Thumma Rose Mary[3] and Chittaluri Sai Vardhan[4]

Bharat institute of engineering and technology India [1,2,3,4]

Abstract

As the automobile industry continues to incorporate more technology into cars, the security of the "automobile network" portion of that technology is in need of tremendous improvement. To protect from cyber-attacks against connected vehicles, automotive manufacturers need an embedded firewall to control traffic into the exposed electronic control units (ECUs) in a vehicle, similar to how a firewall protects home and corporate networks. Embedded firewalls help prevent access from outside cyber attacks on a car's electronics, while still enabling authenticated access for software upgrades and updates. By protecting ECUs such as advanced driver assistance systems (ADAS), steering, braking, etc. from attack. It Works with Autosar, Real Time Operating Systems (RTOS) and Linux to configure filtering rules Offers deep packet inspection for industrial protocols, including CAN bus Meets the requirements of automotive systems by enforcing defined security policies, limiting communication with vehicle control systems to a small set of trusted hosts, and blocking attacks from any other source.

ICICE2021-075

Real-time Implementation for the Speech Steganography using Short-Time Fourier Transform for Secured Mobile Communication

Kalluri Saidatta [1]Subrahmanya Raviteja[2] and Dr.Rajeev Shrivastava[3]

Bharat institute of engineering and technology India [1,2,3]

Abstract

Steganography is the technique of concealing an undisclosed message inside an ordinary public message known as the Carrier. Digital signal processing methods, such as least significant bit encoding, have historically been used for hiding messages. The use of deep neural networks as steganographic functions for speech data is something this paper will present. This paper also demonstrate that the steganographic models suggested for vision are less suitable for speech and introduce a new model that involves the use of inverse-short-time fourier transform and short-time fourier transform within the network as the differentiable layers, thus imposing a vital constraint on the network outputs. Empirically, the efficacy of the proposed methods relative to deep learning based on multiple speech datasets should be demonstrated and the results are quantitatively and qualitatively examined. Moreover, using multiple decoders or a single conditional decoder, the proposed solution may be applied to conceal multiple messages in a single carrier. Finally, under various channel distortions, this model Qualitative studies indicate that human listeners cannot detect changes to the carrier and that the decoded messages are highly intelligible.

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ICICE2021-076

Study report on IoT Technologies for Smart Home Solutions

Vaishnavi Heerekar1, Pranitha Nakkalapally2, Pratigna Nimmala3, Sairaj Danthala4, Nandugopal Gandla5 and Abhishek Kumar[6]

Bharat institute of Engineering and Technology Hyderabad India[1,2,3,4,5]

Abstract

The Internet of Things (IoT) technology establishes a connection between all things and the internet via sensing devices and implements intelligent the identification and management. Smart homes are equipped with sensors and technology that assist the user and help him in many conceivable situations. Home automation based IoT is versatile and popular applications and the rapid development of these applications also steps into smart home. This paper presents a study on the IoT and its recent advancement and its application in smart homes. Next, we relate research work with the practical possibilities for the implementation of the smart homes using IoT technologies. Further, we classify the reported research work on the basis of the technology used. Moreover, we present the practical technological hindrance towards the implementation of the technology in practice. Finally, we present the possible solutions for the implementation of IoT based smart homes in future wireless communication system.

ICICE2021-077

Study on Machine Learning Based Spectrum Sensing Techniques for Cognitive Radio Networks

Thati Vijay Kumar[1], Vajra Kireeti Sananboyina[2], Galipalli Pooja[3], Arikolu Ashwini[4] and Abhishek Kumar[5]

Bharat institute of Engineering and Technology Hyderabad India[1,2,3,4,5]

Abstract

Cognitive radio (CR) systems are expected to have the learning capability, which enables the secondary users to learn the radio environment. Actually, Spectrum sensing technique provides secondary users the capability to learn the radio environment and find the spectrum holes for the dynamic spectrum access. Developing an efficient and reliable spectrum sensing techniques is still a challenging task to implement CR system in practice. The recent advancement in machine learning techniques shows its capability to solve the complex wireless communication system problems. This paper presents a study on the machine learning based spectrum sensing techniques for CR networks (CRNs) and its recent advancement. Next, we relate research work with the practical possibilities for the implementation of the CRNs with machine learning techniques. Further, we classify the research carried till now on the basis of the technology used. Next, we present the advantage of the reported work and the practical hindrance to implement the technology. Finally, we present the exiting challenges and possible solution for the implementation of machine learning based spectrum sensing techniques for CRNs for future wireless communication technology.

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ICICE2021-078

Automatic dual-axis solar tracking system based on intelligent photodetection

Chinthulla Suma Priya[1], Mamidi Surya Sai Kalyan[2] and Balaji Sompalle[3]

Bharat institute of Engineering and Technology Hyderabad India [1,2,3]

Abstract

Energy crisis is the most important issue in today's world. Conventional energy resources are not only limited but also the prime culprit for environmental pollution. The generation of power from the reduction of fossil fuels is the biggest challenge for the next half-century. Renewable energy resources are getting priorities in the whole world to lessen the dependency on conventional resources. The idea of converting solar energy into electrical energy using photovoltaic panels holds its place in the front row compared to other renewable sources. Solar energy is rapidly gaining the focus as an important means of expanding renewable energy uses. Solar cells those convert sun's energy into electrical energy are costly and inefficient. But the continuous change in the relative angle of the sun with reference to the earth reduces the watts delivered by the solar panels. Different mechanisms are applied to increase the efficiency of the solar cell to reduce the cost. In this context, a Solar tracking system is the most appropriate technology to enhance the efficiency of the solar cells by tracking the sun. LDR's are used as the sensors of the solar tracker. Solar trackers move the payload towards the sun throughout the day. The designed tracker has a precise control mechanism that will provide three ways of controlling the system. A small prototype of the solar tracking system is also constructed to implement the design methodology presented here.

ICICE2021-079

Comparison and Analysis of Sub-optimal performance of OFDM/SDMA uplink System using Conventional Multiuser Detection Techniques

Dr Shahnaz K V[1],Dr Papiya Dutta[2] and Dr. C.K.Ali [3]

Bharat institute of Engineering and Technology Hyderabad India[1,2] ,NIT Calicut[2]

Abstract

The major challenge in the practical accomplishment of OFDM/SDMA system depends on the efficient implementation of a MUD technique that separates the spatially multiplexed signal streams. Over the years, several MIMO detection algorithms for spatially-multiplexed signals have been developed. The MIMO MUDs that are popular in the literature and used in practice are decorrelator (also known as ZF), MMSE, successive interference cancellation (SIC), VBLAST, and MLD. The ZF and the MMSE are linear MIMO detectors, whereas the rest of the methods are non linear techniques. All MUD techniques in general can be explained as a solution to a quadratic optimization problems in most cases. In this work, basic principles of ZF, MMSE, ZF-OSIC, MMSE-OSIC and ML are described briefly and their performance is compared. Although the detection techniques evolved so far are matured in theory, their implementation in a real-time scenario is still challenging. It is analyzed in this paper that the inferior BER performance of sub-optimal detection method when compared to MLD is due to bad channel effects.

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ICICE2021-080

Strengthening Mechanism of Carbon- Nanotube Reinforced Alumina Composites

Sophia Rani I1, Reeta Mary I2 and Senthil Kumar R3

Bharat Institute of Engineering and Technology India1,Government Arts College, Coimbatore India2, ARCI 3

Abstract

Ceramics are important structural materials for engineering applications because of their excellent mechanical properties. Among various ceramic materials, aluminium oxide, commonly referred to as alumina, possesses strong ionic interatomic bonding giving rise to its desirable material characteristics. It can exist in several crystalline phases which all revert to the most stable hexagonal alpha phase at elevated temperatures. This is the phase of particular interest for several engineering applications such as abrasion resistant tiles, ballistic armors, grinding media, etc. Though alumina ceramics exhibit high hardness and good wear resistance, it possesses poor flexural strength and fracture toughness. Many attempts have been made to fabricate composites of alumina to improve its mechanical properties by adding suitable reinforcements. Carbon nanotubes have been widely investigated for their applications as reinforcing agent in structural materials, owing to their excellent mechanical properties (S. Iijima 1996). Carbon nanotubes (CNTs) are nano-scale tubes of graphitic carbon and are known to have the combination of best properties in terms of their stiffness, strength, electrical, thermal, magnetic and chemical properties. These properties mainly arise from the sp2 hybridization of C-C bond, small diameter with cylindrical structure, very high aspect ratio (~1000), etc. However, achieving dense alumina composites with uniform CNT distribution is intricate due to the intrinsic characteristics of CNTs such as clustering and poor wetting behaviour with the matrix. In the present work, an improved method to enhance the dispersion of CNTs in alumina matrix is presented. CNT-Alumina composites with improved mechanical properties were fabricated and the strengthening mechanism of CNTs in the alumina matrix was demonstrated using microstructural characterization. The dispersion and preservation of CNTs in alumina matrix were also studied by microstructural characterization and Raman Studies.

ICICE2021-081

THE POWER GENERATION FROM PIEZOELECTRIC FOOTSTEP TECHNIQUE

R.Sathish Kumar1, Lokineni Sai Bindu2, Challa Sangeetha3, Kalappagari Samyuktha4 and Koneredy Sai Chethan Reddy5

Bharat Institute of Engineering and Technology India 1,2,3,4,5

Abstract

Now-a-days power has become a major and basic need for human life. As there is increase in power demand for power, the necessity for non-conventional resource is being desired. There are many alternate ways of producing electricity. One of it could be footstep power generation which is effective method of producing electricity The mechanical power transformation into electrical power as the pressure exerted by the foot step and it's basically called as "Foot Step Power generation". The system generates voltage using footstep force. The system serves as a medium to generate electricity using non conventional sources (force) and /store/use it. The project is designed to be useful at public places like railway stations where a lot of people keep walking through all day. At such places these systems are to be placed at any entry points where people travel through entrance or exits and they have to step on this device to get through. These devices may then generate a voltage on every footstep and when mounted in series they will produce a sizeable amount of electricity. For this purpose we here use piezoelectric sensors that use piezoelectric effect in order to measure acceleration, force, pressure by its conversion into electric signals. We here attach a voltmeter in order to measure its output and small led lights for demonstration. Piezoelectric effect is the ability of certain materials to generate an electric change in response to applied mechanics stress.

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ICICE2021-082

DESIGN A WEARABLE IOT DEVICES USING PRESSURE SENSOR FOR FALL AVOIDANCE BY HUMAN MOVEMENT MONITORING SYSTEM

Govindu Sowjanya1, Joy Sangeeth Raj2, Marri Anusha3, Pyata Shiva Kumar Reddy4, Kanishetty Praneetha5 and Putta Arun Kumar6

Bharat Institute of Engineering and Technology India1,2,3,4,5,6

Abstract

Seamless monitoring is one of the major challenge for the human community because of increasing the strength of sixty years old people and occurrence of many accidents in the fall-risk related works like construction, manufacture and others .Wearable Io devices are useful for continuous health monitoring, analyzing the behaviour and fall detection. Falls are one of the foremost causes for injuries and health in our life. Present work proposes the human movement monitoring by using the pressure sensors for avoiding human falls and machine(SVM) machine learning algorithm. The proposed wearable IoT devices for seamless monitoring system is proving 99% accuracy ,less complex and compatible to use over other IoT wearable devices.

ICICE2021-083

AUTOMATIC PLANT WATERING SYSTEM USING MICROCONTROLLER

Sirigadde Maneesha, Mudhireddy Sreeja and Middinti Sravani

Bharat Institute of Engineering and Technology India1,2,3

Abstract

This project is taken up as India is an agriculture oriented country and the rate at which water resources are depleting is a dangerous threat hence there is a need of smart and efficient way of irrigation. In this project we have implemented sensors which detect the humidity in the soil (agricultural field) and supply water to the field which has water requirement.The project is microcontroller based design which controls the water supply and the field to be irrigated. There are sensors present in each field which are not activated till water is present on the field. Once the field gets dry sensors sense the requirement of water in the field and send a signal to the microcontroller. Microcontroller then supply water to that particular field which has water requirement till the sensors is deactivated again. In case, when there are more than one signal for water requirement then the microcontroller will prioritize the first received signal and irrigate the fields accordingly. This project uses Microcontroller. It is programmed in such a way that it will sense the moisture level of the plants and supply the water if required. This type of system is often used for general plant care, as part of caring for small and large gardens. Normally, the plants need to be watered twice daily, morning and evening. So, the microcontroller has to be coded to water the plants in the greenhouse about two times per day. People enjoy plants, their benefits and the feeling related to nurturing them. However for most people it becomes challenging to keep them healthy and alive. To solve this problem we made a project for those who cannot water the plant due to their busy schedule or when they go outside for long time. The system automation is designed to be assistive to the user. We hope that through this project people will enjoy having plants without the challenges related to absent or forgetfulness.

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ICICE2021-084

Study of Memory Cell Architectures in QCA Technology

Dr. Neeraj Kumar Misra[1] ,Sushmitha Yadav[2] , Dr. Anil Kumar Sahu [3],Dr. Sankit Ramkrishna Kassa[4], Dr. Dinesh Kumar[5]

Bharat Institute of Engineering and Technology, Hyderabad, Telengana, India[1,2,3,5] and SNDT Women's University, Mumbai4

Abstract

CMOS technology is experiencing power dissipation, short channel effects and quantum effects problems with its relation to chip size, which makes it too hard for integrating more transistors, reaching its Scaling limitation. Quantum Dot Cellular Automata (QCA) is one of emerging nanotechnologies in recent times to overcome this flaw. The QCA technology is used for designing and implementation of digital circuits efficiently due to its features like smaller feature size, higher speed, low power dissipation and high switching frequency. These characteristics prompt memory cell architecture and implementation in QCA as an appealing choice for manufacturing storage devices. This paper discusses architectures of several line and loop based memory cells to compare in terms of density, low power, complexity and switching frequency and to deduce an architecture method which is significant for designing memory cells.

ICICE2021-085

Machine Learning Models in the era of COVID-19 (SARS-CoV-2) Pandemic

Rajat Chaudhary[1], Rajkumar Banoth [2] and Rajesh Tiwari[3]

Bharat Institute of Engineering and Technology India[1,2,3]

Abstract

The coronavirus 2019 (COVID-19) is a communicable disease which is growing globally at an accelerating rate with a basic reproduction number (R0) of 2–2.5, imply that two-three persons will be infected from an index patient. World Health Organization (WHO) acknowledged the COVID-19 as one of the pneumonia pandemic disease. The novel coronavirus disease is named Severe Acute Respiratory Syndrome Coronavirus (SARSCOV2) is a mild to severe respiratory disease having fever, cough, and shortness of breath as initial symptoms. This virus disseminates through contact with infectious persons, touching contaminated surfaces and infectious air droplets. The virus invades into healthy cells of the body especially the lungs causing the respiratory problems and sometimes causes organ failure by killing healthy cells which eventually leads to death. The origin of coronavirus disease was zoonotic, as the initial cases had been reported from animals in Wuhan. This paper presents the literature review on the diagnosis of clinical characteristics of COVID-19 patients. In addition, the remedies of COVID-19 patients are discussed utilising machine learning and prediction models. The datasets related to the cases of COVID-19 patients are also discussed in this paper. Finally, the open issues, and future directions are discussed.

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ICICE2021-086

New Application for Indium Gallium Zinc Oxide Thin Film Transistors

Dinesh Kumar[1] , Prashant Kulkarni[2] and Santosh Kumar Agrahari [3]

BIET HYDERABAD India [1,2] ,POORNIMA UNIVERSITY INDIA[3],Bagor University U.K.[1]

Abstract

Amorphous Indium-Gallium-Zinc-Oxide Thin-Film-Transistors (a-IGZO TFTs) are considered as a chief prospective active channel layer in TFT families due to higher field effect mobility and uniformity. In this piece of work the characterization and fabrication of IGZO thin film transistors (TFTs) has been studied for new applications like UV photodetection/sensing. Indium Zinc oxide (IGZO) thin film transistors are very much suited for UV sensing/photodetection applications because they absorb predominantly in the UV region owing to IGZO wide bandgap. When operated as a TFT, many device performance parameters alter such as threshold Voltage, on-off current and mobility. In this work the effect UV light on performance parameters is observed. Sensors play an important role in creating solutions using the Internet of things (IoT). Skin cancer is caused by a long period of exposure to ultraviolet radiation of the sun, and can be prevented by taking preventive measures. IoT System for Ultraviolet Ray Index Monitoring can be designed and implemented using this type of IGZO TFT as a UV photo detector.

ICICE2021-087

AN OPTIMIZATION ALGORITHM FOR CONNECTIVITY AND COVERAGE IMPROVEMENT FOR MOBILE SENSOR NETWORK.

Prashant Kulkarni, Santosh Agrahari and Dinesh Kumar

BIET,HYDERABAD India 1 ,POORNIMA UNIVERSITY INDIA2,BIET,HYDERABAD 3

Abstract

Optimisation is a powerful mathematical method for improvement of key parameters in any system. The improvement achieved by either minimising or maximising the parameter for desired output. In the mobile sensor network the nodes are moving. The paper concentrates on development of algorithms for mobile sensor networks for tracking applications. In this paper, the optimisation algorithms were developed by using inspiration from nature. The animals like birds, spiders, tigers,and ants follow a special behaviour in finding their food, shelter and mate. We have simulated these algorithms in matlab and proved the improvement in connectivity and coverage of wireless sensor networks. We have proved that a hybrid combination of these behaviours will improve the connectivity and coverage of mobile sensor networks.

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ICICE2021-088

GAS LEAKAGE DETECTION BASED ON IOT

Prashant Kulkarni1, A Abhaya Shree2, S Niharika Niharika3, V Uday Kiran4 and M Santhosh Santhosh4

BIET,HYDERABAD India 1,2,3,4

Abstract

Gas leakages results a serious problem in household and other areas where household gas is used, therefore the proposed gas leakage detection and monitoring system is developed. There are many methods available for booking a Gas Refill, methods include online booking, telephonic booking etc. It will be difficult situation for the one who uses LPG gas for cooking regularly. The aim of this paper is to present a new system automatically books a cylinder when the gas is about to empty is by sending a notification to the gas agency using Wi-Fi using Internet of Things approach. In addition to that sensor is used to detect gas leakage at home. If the gas leakage is sensed automatically it will send SMS to theuser. Wi-Fi is one of the most used networks across the world.Hence, load cell has been used to monitor the weight of theLPG gas regularly. The values are next fed to themicrocontroller. If the gas in the cylinder indicates a value where the remaining percentage level is crossed below thethreshold level set for gas to be indicated as getting emptied, then a notification will be delivered to gas enterprise automatically to book the new cylinder. Subsequently, reply notification will be sent to the customer about the booking status. At the same time, application software is developed in the gas enterprise to inform and record the booking. This, work this helps the society to specifically indicate gas leakage and also helps both customers and the agency to get the gas booking made automatically using the IOT technique.

ICICE2021-089

A Review on Performance Evaluation of Data Mining Classification Using Support Vector Machine

Dr. Meghna Utmal

Deptt. of MCA , GGITS, Jabalpur India

Abstract

The paper aims to explain the performance evaluation of different classification models from data mining process. Classification is one of the most important tasks for different application such as text categorization. Classification is the most widely used data mining technique of supervised learning. This is the process of identifying a set of features and templates that describe the data classes or concepts. We are proposing the various classification algorithms to improve the performance. In this paper, a novel learning method, Support Vector Machine (SVM) is discussed which is a powerful machine method developed from statistical learning and has made significant achievement in many fields.

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ICICE2021-090

IoT Based Air Pollution Monitoring and sensing system

Dr Papiya Dutta1, Praveen Reddy Kasala2, Sai Teja Cheguri3, Vinay Madishetti4 and Mahesh Aithagoni5

Bharat Institute of Engineering and Technology India 1,2,3,4,5

Abstract

Air Contamination is a major issue these days. It is essential to screen Air Quality and monitor it for future and sound living for all. So, we propose an Air Quality observing system that help us to find and check live air quality through IOT.It utilizes air sensor to detect nearness of destructive gases found all around and transmits this information to microcontroller. The sensor associated with forms this information and sends it over to the web. This enables us to screen air contamination in various zones and make a move to combat it.In addition, there is a temperature sensor for estimating the temperature of a room.As the world's population is becoming increasingly urban, the cities are under pressure to remain livable. In recent years, the air quality of the cities has become one of the major cause of concern around the world. Thus, it is necessary to constantly monitor the air quality index of a city to make it smart and livable. In this paper, we propose and develop an IoT based Air Quality Monitoring System for Smart Cities. The real-time data of the air quality is accessed through the smart devices and analyzed to measure the impact on city dwellers. The smart devices are capable of measuring the Temperature, Humidity, Carbon Monoxide, LPG, Smoke and other hazardous particulate matters like PM2.5 and PM10 levels in the atmosphere.

ICICE2021-091

CARS TALKS TO PHONES: A DSRC VEHICLE-PEDESTRIAN SAFETY SYSTEM

Mohan Babu Chandika[1], Sai Sudha Deekonda[2], Varun Balsu[3], Sai Sumanth Kumar Shavagoni[4] and Sanjay Durishetti[5]

Bharat Institute of Engineering and Technology India [1,2,3,4,5]

Abstract

The prevalence of smartphones presents a unique opportunity to develop a system that can have a significant impact on reducing the annual 400,000 fatalities from pedestrian traffic accidents. This system gives 360 degrees, extended range, NLOS view where both the driver and the pedestrian are warned of a possible collision. This, the first of its kind, system was developed from a two year collaborative research effort between Honda and Qualcomm to leverage DSRC so vehicles can communicate with smartphones to preempt a possible collision between a pedestrian (with a smartphone) and an approaching vehicle. This paper describes the pedestrian and vehicle-based algorithms and gives an overview of how this system warns both the driver and the pedestrian so they can take evasive action and prevent a collision. We present the results from our field tests where we demonstrate several pedestrian safety scenarios and present the over-the-air performance data collected in the field tests. Finally, we discuss remaining challenges and present possible approaches to reducing false positives, minimizing spectrum and channel congestion and improving security and localization.

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ICICE2021-092

Acoustic Echo Cancellation Algorithm for Channel Estimation with Tolerable Double Talk for MIMO OFDM systems

Sairamchary Nagapuri1, Sanjay Kumar Suman2, L Bhagyalakshmi 3and Amit Agrawal4

Bharat Institute of Engineering and Technology India 1,2,4 and Rajalakshmi Engineering College, Chennai India3

Abstract

Channel is a most general sense can describe everything from the source to the sink of the radio signal including the physical medium. Channel model is a mathematical representation of the transfer characteristics of the physical medium. Channel models are formulated by observing the characteristics of the received signal. It explains the received signal behaviour is used to model the channel. There is a need for high isolation between transmit and receive antennas to minimize coupling and to keep the system stable. Physical separation of the antennas is necessary but usually not sufficient to reduce the impact of unwanted echoes. Digital signal processing (DSP) techniques are necessary to reduce the unwanted echoes in the feedback path between antennas, which is also known as coupling loop interference, and thereby improve the isolation figure. AEC (Acoustic Echo Cancellation) for channel estimation is a better solution for the problem cited. This method is applied on the OFDM for better results.

ICICE2021-093

Review on High Speed and Low Power Approach of Asynchronous Delta-Sigma Modulator

Dr.Anil Kumar Sahu1, M. Deepika Reddy2, P. Vaibhavi3, Sai Charan4 and G. Namritha5

Bharat Institute of Engineering and Technology India 1,2,3,4,5

Abstract

Asynchronous Delta-Sigma Modulator (ADSM) is a particularly vital a part of the majority of conveying devices and knowledge converters. Despite its long history, the sigma-delta modulator remains one of the most popular data converter circuits. Conventionally, sigma-delta modulators are widely implemented in low-speed, high-resolution applications. Low power consumption is a particularly important feature in portable applications, leading to longer battery life. Accordingly, power-efficient architectures such as continuous-time sigma-delta modulators have attracted more attention in recent years.The execution criteria believe the Low working voltages, low power utilization, high SNDR and better focus recurrence.This paper focuses on introducing solutions to solve issues existing in asynchronous sigma-delta modulators including complex decoding schemes, lacking noise shaping and effects of limit cycle components. These issues significantly limit the implementation of ASDMs in data conversion. In this literature review paper, we will, take a look at few of the recently published work and their results.

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ICICE2021-094

Design and Implementation of Traffic light control System using FPGA

Basava Raju Ramadurgam[1], Snehitha Buddula[2], Bhargav Mannepalli[3], Siddhartha Bhupathi[4] and Sukesh Goud Puli[5]

Bharat Institute of Engineering and Technology India [1,2,3,4,5]

Abstract

Traffic light control is a tough problem in many areas.This is due to large number of vehicles.Traffic light controller sets some rules and instructions to drivers,to avoid collision and hazards.The main aim of this project is to minimize the waiting time of the vehicles at traffic signals.Traffic light control system can also be designed based on microcontroller and microprocessor.But the disadvantage with this is ,that works on fixed time,which is functioning according to the program that does not have the flexibility of modification on real time basis.So,this proposed system will be designed using FPGA with traffic sensors to control traffic according to requirement,that means the designer can change the program if it is required and can reduce the waiting time.The system is coded by using verilog HDL.And this code is dumped in FPGA development kit by using Xilinx ISE tools.

ICICE2021-095

AN INVENTIVE SURVEY ON IMAGE FORGERY CONCEPTS

Tanvi Sharma[1] and Dr S R Tandan[2]

Dr C V Raman University Kota Bilaspur India [1,2]

Abstract

In this paper we present a new survey concept for all researchers and scholars who want all the published and available papers. This new method of research will be of great help to those who are choosing their job research topic and who are really looking for a way to start looking for relevant and relevant work with the types of papers already published in the Journal.

ICICE2021-096

SURVEY VISUAL CRYPTOGRAPHY

Praveen Chouksey1 and Dr Rohit Miri2

Dr C V Raman University Kota Bilaspur India 1,2

Abstract

Data transfer between users on the network is an important factor today, the network user wants to share his or her data among other users of secure data transfers. There are many types of data transactions, but the guaranteed level of data transactions is an important factor that everyone wants. The transfer of private data remains a major problem for the network. Encryption of encryption and advanced technology for the sharing of encryption, embedding the cryptography process plays a major role. Effective embedding of confidential information using virtual cryptography greatly aids in the transfer of confidential data. This paper provides a study of the various cryptographic methods and their effectiveness on secure network transfers

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ICICE2021-097

Forest Fire Detection using UAV based Aerial View Object Detection and Wireless Sensor Networks

Amal Sujith[1], Gautham P Krishnan[2], Vishnu Ov[3], Geethu Rs[4] and Ashish Mohan[5]

Amrita Vishwa Vidyapeetham Amritapuri, India [1,2,3,4,5]

Abstract

Forest fire is one of the worst devastating events in the environment. It can harm the lives of plants and animals. As a result of climate change, the number of forest fires increased drastically in recent decades. Early-stage detection can reduce the impact of catastrophic fire. The Identification and detection of forest fire in the initial stage is an extremely difficult task even today. The satellite monitoring system is widely used in the detection of a forest fire, but it can only detect fire after a long time. The use of Unmanned Aerial Vehicle for surveillance has increased tremendously in recent years. The delay in detection can be minimized by using Unmanned Aerial Vehicle and Wireless Sensor Network. In this paper, we introduce a new approach to the detection of a forest fire. The aerial vehicle equipped with a camera will capture the image of fire, machine learning algorithms are used to predict the output. Wireless Sensor Network will increase the accuracy of prediction by combining the data from the sensor network. The key in this system is easy decision making by analyzing the image from the Unmanned Aerial Vehicle within a short time.

ICICE2021-099

The Architecture of a Ring Based TDM PON using blockchain based bandwidth resource allocation

Kaveti Kanungoe1 and Anirban Kanungoe2

Bharat Institute of Engineering and Technology India 1,2

Abstract

With the advent of fiber-to-the home (FTTH), fiber-to-the-curb (FTTC) and fiber-to-the-building (FTTB) as part of a access network solutions in recent times, the network service providers have started deploying tree based passive optical networks (PONs). However these PONs might not be enough to satisfy the need of scalability and the survivability of the network. In this paper, we propose the use of “Variable Optical Power Splitter” (VOPS) in the Remote Node of a ring based EPON. The transmitted power entering this passive VOPS can be adjusted depending on the distance from an optical line terminal and the number of users required at a particular remote node which ensures the ease of scalability of the network. On the other hand, the ring architecture provides extra protection to enhance the overall survivability of the network. Finally, we provide a detailed calculation of the network availability for the proposed network while maintaining the user data delivery quality in terms of BER as well as the power budget.

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ICICE2021-100

HIDDEN CELL PHONE DETECTOR

Yamini Yarrabothu

Bharat Institute of Engineering and Technology India

Abstract

There is great need to limit the use of cell phone at particular places and at particular times. Hence, the use of intelligent mobile phone detector is guaranteed. This project is aimed to detect the mobile phone where the mobile communication is strictly prohibited like Examination Hall, Classrooms, Hospitals, conference halls, petrol pumps, place of important meeting etc. As presently we don't have any technology that would detect the use mobiles phones in restricted area, Keeping in view this project mainly focus on designing the mobile detection. This project is used to detect the cell phone, when someone is trying to make or receive a call, sending or receiving a message. A buzzer gives an alert in the occurrence of an active mobile phone and an LCD provides a message displaying if the mobile phone is been detected in a distance of one and half meters in the above mentioned conditions.

ICICE2021-101

Modern Approach of Speech Processing Architecture Using Vedic Sutra for Portable Communication Relevance

Dr. Anil Kumar Sahu[1], Cherita Cherita[2] and Neeraj Kumar Misra[3]

Bharat Institute of Engineering and Technology India [1,2,3]

Abstract

Presently a days expanding of VLSI plans and furthermore lead to take care of equipment complex issues by considering all components of VLSI, for example, zone, speed and force. The greater part of advanced sign handling prompts increment territory which in wording diminishes the speed of the preparing information ,from the idea of computerized signal handling to discourse signal preparing in versatile correspondence we utilize under discourse preparing , zone considered in this venture is multiplier under discourse signals where to diminish the zone and speed up, in this task we proposed a framework for multiplier which was created utilizing vedic sutras of Urdhva tiryakbhyam sutra the region decreased and accomplished roughly 100% productivity of the yield, amalgamation and recreation results are completed by utilizing Xilinx and ISM test system.

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ICICE2021-102

Review on Matching of Data Using Low-Complexity Low Latency Architecture With Improved Efficiency Allowed BWA And Error-Correcting Codes Technique.

Dr. Anil Kumar Sahu[1], Dr. Neeraj Kumar Misra[2] and Mareedu Venu Gopal[3]

Bharat Institute of Engineering and Technology India [1,2,3]

Abstract

In the recent world of modern technology , data places crucial role in terms of storage and comparison. The principle behind data comparison is to find the matching data which is stored for maintaining accurate and efficient data, the technique of data comparison used in many operations. When incoming data and stored data are compared an error signal will be obtained which can be a burst error or random error. If there is no error between the incoming data and stored data, the bits will be matching , otherwise there will be a error which can be burst error or random error. for detecting and correcting error here error correcting codes can be used. For getting low complexity and low latency a recent technique is used which also helps to find the hamming distance accurately i.e butterfly-formed weight accumulator BWA. A new architecture used here has a merit of low latency and low complexity also with improved accuracy. A new architecture for matching data with Error-Correcting Code ECC is presented in this to reduce latency and complexity

ICICE2021-103

HAND GESTURE BASED HOME AUTOMATION FOR VISUALLY CHALLENGES

Dr. Anil Kumar Sahu[1], Dr. Neeraj Kumar Misra[2], G. Jhansi3, K. Sukendar Reddy[4], G. Rukmini Reddy[5] and Akhil Naroju[6]

Bharat Institute of Engineering and Technology India [1,2,3,4,5,6]

Abstract

Hand Gesture based home automation for visually challenged is a technology to improve the quality of life for the people with disabilities. A device is designed for the visually challenged people to service them in operating the home appliances individually.A Micro electro mechanical Systems (MEMS) accelerometer is used to sense the accelerations of a hand in motion in three perpendicular directions that is (x, y, z) and transmitted to wireless protocol using Radio Frequency (RF). The RF signals transmission frequency is 2.25 GHz. The gesture code templates are already stored in the microcontroller at the receiver section. The received gestures and the hand gesture shown by the visually challenged is recognized and compared with the templates stored in the receiver. If the templates match the stored templates, then accordingly the home appliances are controlled.

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ICICE2021-104

Study of Quantum Technology in Low Energy Dissipation Circuits and Its Evaluation

Neeraj Kumar Misra[1], Pola Naveen[2], Anil Kumar Sahu[3] and Sankit R Kassa[4], Dr. Dinesh Kumar[5]

Bharat Institute of Engineering and Technology India [1,2,3,5] and SNDT Womens University, Mumbai, India4

Abstract

The demand for alternative VLSI circuits in place of conventional MOS technology keeps on increasing as channel length down in the past few years. Among this alternative technology, Quantum computing has gained a lot of promises due to fast computing speed and low energy dissipation. In this research article, we have study a basic reversible gates quantum circuits such as Feynman gate and Fredkin gate. Moreover, we have discussed quantum-dot cellular automata technology for emerging nano-electronics domain. In QCA technology the less area would mean to implement the high-density device in a small area would ensure high speed in the high-speed nanotechnology applications.

ICICE2021-105

DEVELOPMENT OF A NOVEL AUTOMATIC MEASURING AND RECORDING OF ELECTRIC TRACTION RAIL CATENARY PARAMETERS TO MAINTAIN OVER HEAD EQUIPMENT HEALTHY IN TOWER CAR

B.Sai Sridevi [1] and Sukanth T [2]

Bharat Institute of Engineering and Technology India [1,2]

Abstract

In this paper condition monitoring and fault diagnosis approach, Electric traction rail catenary system is proposed with improved model, control, and analysis methods. There are two main aims of the study. The first is a regular monitoring of the system to determine whether any failure has occurred. The second is to reveal the status of fault occurrence in the future. The proposed system is defined i.e. automatic measuring and recording of over-head equipments by using 3 methods they are LIDAR V3 light which is a laser sensor to measure height , ultrasonic sensor to measure implantation, IR technology to measure stagger. On regular intervals the overhead equipment (OHE) is scanned and compared with previous data recorded through automatic measuring and recording of catenary parameters using Arduino. The potential defects identified through the system are used for directed maintenance. The system realizes a fine-grained detection diagnosis of the pantograph-catenary interaction, OHE defects and then greatly improves the detection efficiency. In addition, a huge economic benefit in terms of less manpower requirement is acquired and avoids the large block requirements. In the present work we have compared proposed method with the 2 existing methods and at the end of the day all the 3 methods are used to increase the measuring, recording, fault detection reliability in the system .

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ICICE2021-106

Review on Comparison of Different AI Techniques for Power Quality Improvement using STATCOM

Seelam Shivaleela[1] and Sukanth Tumu[2]

Bharat Institute of Engineering and Technology India [1,2]

Abstract

Generally in Electrical Engineers (Power System) non-linear loads are used more problems. Due to the increasing of Power Electronic equipments and nonlinear loads in Power distribution system Harmonics are introduced in the Power System. So, the Power Quality(PQ) will be classified as like Voltage Sag and Swell, voltage Flickers, Harmonics etc., In this Power Quality problem Harmonics is more severe. These Harmonics are to be mitigates for Power Quality enhancement. A Static Synchronous Compensator (STATCOM) which Compensates Harmonic Current can improve the Power Quality to enhance the reliability and stability on Power utility. The STATCOM is one of the Flexible Alternating Current Transmission System (FACTS) device it can be used to mitigate the Harmonics. A Synchronous Reference Frame Theory (SRF THEORY) is used for the generation of Reference Currents. In this project analysis of different Artificial Intellegence (AI) techniques are compared with Conventional theory for reduction of Total Harmonic Distortion (THD) in the Source Current. Hysteresis Current Controller is used in place of Pulse Width Modulation (PWM) to generate the gate pulses to the Voltage Source Inverter (VSI) of the filter. Hysteresis Band Current Controller (HBCC) is used to control the switching of Voltage Source Inverter(VSI).

ICICE2021-107

Arduino Based Smart Traffic Control System

Raviteja Merugu[1] and Anirban Kanungoe[2]

Bharat Institute of Engineering and Technology India [1,2]

Abstract

The population increases day by day, the increase in population leads to the increase in the number of self vehicles and the number of automobiles on the road. Due to more number of vehicles on the road, it generates problems to citizens. Citizens are facing a problem to get out of the traffic, therefore it is important to develop a solution for the above problem in this current running embedded technology. So in this project we will try to implement a system using a microcontroller and Ultrasonic sensors. Microcontroller behaves as the brain of the system and the ultrasonic sensors are placed along the four sides of a junction. The Ultrasonic sensor gets activated when the vehicle go along the road against it. Microcontroller gets the different values from the Ultrasonic sensors, based on the different values of the sensors, driver circuit will give different range of output values to the led. Based on the values of ultrasonic sensor values the duration of the red and the green led should be controlled. In this we maintained different timing intervals for different sensor values.

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ICICE2021-108

Silent Sound Technology

Sindhuri[1], Shruthi Devara[j2] and Chennaboina Kranthi Rekha[3] and Dr Dinesh Kumar

Bharat Institute of Engineering and Technology India [1,2,3,4]

Abstract

Everybody has the experience of talking aloud in the cell phone in the midst of the disturbance while travelling in trains or buses. Now this Silent Sound Technology is the solution for this problem . The Silent Sound Technology is an amazing solution for those who had lost their voice but wish to speak over phone. SST will notice every movement of the lips and transform them into sounds. It can be used for languages like English, German, French but not like Chinese because a different tone means a different meaning. It will be useful for secret calling because the caller need not utter a word loudly just lip moments are enough. Silent Sound Technology (talking without talking) will work based on two methods i.e., Electromyography and Image Processing. Electromyography consists of electrode attached to face which helps in converting the electrical pulses made by facial muscle into the sound speech. Whereas in Image processing we use optical camera and also the ultrasound probe which captures the images of lips and tongue movement.

ICICE2021-109

An Integrated Technique for Security of Cellular 5G-IoT Network Healthcare Architecture

Vishnu Kumar Mishra[1], Megha Mishra[2], Rajesh Tiwari [3]and Jitendra Sheetlani[4]

SSTC-SSGI INDIA 1,2 and BIET,HYDERABAD INDIA 3 and SRI SATYA SAI University of Technology & Medical Science, Sehore India

Abstract

Security is possibly the most significant networking concern. It is not only considered potentially detrimental to the monetary penalty, but also creates other more pressing problems such as customer loyalty, social trust and personal protection. Networking is focused on IoT and wireless. Their performance and real value comes from the development of services on top of the IoT devices linked to them for the remote and lack of controlled devices, IoT and wireless network add more data and produce more devices to the network in more locations; it may lead to additional security issues rather than 5G age. Every industry with cellular IoT can be transformed. The networking is a prime requirement for every sector and exist as four IOT segments for multipurpose use, that can be used with one 5G network. The four prime divisions are: Substantial IoT, Broadband technology for IoT, decisive IoT and business automation related IoT. This research offers a straightforward roadmap for development and to solve all cases of 5G-IoT in a cost-effective manner. It also offers perfect knowledge that affects us as evidence for the future, from easy to the most complex one. This overview introduces the IoT and wireless communications to enhance node security. We begin with the preliminary definitions of IoT and security questions in this report.

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ICICE2021-110

The Power of PBL with its Consequences in Online Classes: Covid 19 Pandemic Impact

Vishnu Kumar Mishra[1], Megha Mishra[2], Rajesh Tiwari and Rajeev Shrivastava[3]

SSTC-SSGI INDIA 1,2 and BIET HYDERABAD INDIA [3,4]

Abstract

Problem-based learning (PBL) is a learner-oriented teaching methodology through which the familiarity of cracking an undetermined problem which is restricted for stimulated content is performed. Learners gain knowledge of a subject in a deep manner. The PBL method does not concentrate for explaining the problems by means of a given answer, other than it allows additional desirable abilities and attributes to be shaped. This engages the achievement of details, improved synchronization and link the assembly and communication. Pedagogic systems have been exaggerated universally by the COVID-19 pandemic, and this pandemic is responsible to the complete shutting down of schools, universities and colleges. Online learning comprises courses delivered 100 percent interactive by postsecondary institutions, except massively open online courses (MOOCs). Compared to conventional courses that work as a brick-and-mortar devoting for school house, online learning, or virtual classes offered over the internet. The approach helps learners to improve the abilities and turns it to opportunity by doing practice. It improves condemnatory assessment, retrieval of anthologized and facilitates continuous knowledge surrounded by a team. This study also explores the downside of PBL by using the online platform with its benefits.

ICICE2021-112

Voice based COVID-19 Diagnosis

Abhay Mittal[1], Sumit Jadhwani[2], Shubham Tidke[3], Pranav Katariya[4] and Sachin Pande[5]

P.I.C.T, Pune,India[1,2,3,4,5]

Abstract

As on 15th December 2020, 72.5 million cases and 1.6 million deaths due to COVID-19 have been reported worldwide. The conventional method that is being used currently, is reverse transcription PCR testing. Time required by such a method can vary from one or more days. Also, this method is expensive [15], breaks social distancing norms and may not be safe for the user. This is why an alternate tool is necessary. Our survey indicates that COVID-19 primarily affects the respiratory system and has a noticeable impact on the voice of a person. This impact can be captured with the use of artificial intelligence. Cough, cold, fever and breathing difficulties are the major symptoms. Cough sounds, if recorded, can provide useful insights using deep learning techniques [5]. The presence of open source datasets by various organizations and universities, including Coswara [10], will contribute greatly in this direction. We believe if the analysis is done properly, these methods can help humanity fight this pandemic. Apart from early diagnosis of COVID-19 victims, this also has an impact on the global economy.

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ICICE2021-113

Study of cryptographic file systems in userspace

Sahil Naphade[1], Ajinkya Kulkarni[2], Yash Kulkarni[3], Yash Patil[4], Kaushik Lathiya[5] and Sachin Pande[6]

Pune Institute of Computer Technology India[1,2,3,4,5,6]

Abstract

With the advancements in technology and digitization, the data storage needs are expanding, along with the data breaches; that can expose sensitive data to the world. Thus, the security of the stored data is extremely important. Conventionally, there are two methods of storage of the data, the first being hiding the data and the second being encryption of the data. However, finding out hidden data is simple, and thus, is very unreliable. The second method, which is encryption, allows for accessing the data by only the person who encrypted the data using his passkey, thus allowing for higher security. Typically, a file system is implemented in the kernel of the Operating systems. However, with an increase in the complexity of the traditional file systems, those that are based in the user space of the OS are now allowing for additional features on top of the traditional file systems, such as encryption-decryption, compression. There are several examples of such a file system, most notable being FUSE (file system in user space). Owing to the need of individuals and corporations alike, several user space file systems have been created over the years. In this paper, we are trying to shade light upon the creation of such file systems, along with the issues and the advantages of the same.

ICICE2021-114

SELECTION OF CABLE SYSTEM (CABLE & CONNECTOR) FOR UNDERWATER APPLICATION

Dr Arun Kumar [1] and Papiya Dutta [2]

Bharat Institute of Engineering and Technology India [1,2]

Abstract

Underwater systems are mostly used for study of marine biology, underwater archaeology, underwater surveying and mapping, underwater inspection system, underwater explosive detection on sea-bed, nuclear testing and for underwater Defence applications.To carry out the task specifically designed system is lowered in the sea at required depth with the help of cable system, data and images are captured for study purpose by remote operation. The parameters required for inspection systems may include cameras for imaging, robotic arm for inspection, sensors for sea parameters measurements and signal lines for control and command Systems required for Defence Application may include many video signals, performance parameters and other command and control signals at higher bandwidth. The most important defence application is development and testing of submarine launched missiles. During the development phase of the missile many parameters are needed to be monitored and acquired. Study of marine biology may require periodic observation and data collection at a lower bandwidth compared to the requirement of defence application. The system is required to be configured as per the specific requirement. Normally when such systems are designed for underwater application more attention is given to design of the system and design of cable system is ignored. Design and knowledge of cable system is equally important for underwater application and in some cases design of cable system becomes more important than the actual system.The cable system consists of cable, connectors and cable glands. In this paper the various aspects and parameters are discussed in detail for selection of the best cable system suited for the requirement.

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ICICE2021-115

Detection of drone using acoustic sensors

Mahitha Y [1], Monalika K[2], Vikas Reddy Yennam[3], Harathi B[4] and Dr.Arun Kumar[5]

Bharat Institute of Engineering and Technology India [1,2,3,4,5]

Abstract

Drones are no longer just for the supreme enthusiasts, as these devices have penetrated the world of technology and consumer use. With all this attention, these unmanned aerial vehicles(UAV) are now used in more practical and innovative applications. However, drones carry the potential of many illegal activities from smuggling outlawed material, unauthorized surveillance of targets and individuals, leading to the worse threatening scenarios. As a consequence, it has become crucial to develop effective and affordable systems to report a drone flying over critical areas. In this context, our research is based on a system which acoustically detect and track objects, such as drones or ground robots, using acoustic sensors(passive).The described sensor, is completely passive, and composed of a 120-element microphone array. This is a machine learning based UAV warning system which associates major parts like real time data acquisition, preprocessing, AI based decision making controllers, emergency alert structure. The described techniques can detect and track UAV and It is a good complementary approach to more traditional techniques such as Radio frequency analyzers, optical sensors etc. Our preliminary results illustrate the feasibility of the proposed system and identify the challenges for future research.

ICICE2021-116

DESIGN OF HIGH EFFICIENCY BIDIRECTIONAL BUCK – BOOST CONVERTER FOR ELECTRICAL VECHICLES, PHOTO VOLTAIC AND ENERGY STORAGE APPLICATONS

Kalyani Mande

Bharat Institute of Engineering and Technology India

Abstract

In the project we proposed an High efficiency bidirectional buck-boost converter for electrical vehicles, photo voltaic and energy storage applications. In the present condition energy saving is more important, by using renewable energy sources we need to generate the power and utilize that power for various purposes. There are two main aims of this study are energy saving for future generations and another one is using renewable energy sources like solar, wind to run the electric vehicles. Main objective to implement this is reducing the pollution content in the environment. Bidirectional buck boost converter operates like step-down and stepup of dc power supply. Energy stores in the batteries that are collected from renewable energy storage plants and power plants and these are connected to grid. Improves the efficiency of the system by using bidirectional buck-boost converter and it reduces the ripple in the output of the system. The proposed control method is analysed in detail, and its result is verified with MATLAB\SIMUlINK software.

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ICICE2021-117

Leveraging Blockchain technology in the Education Sector

Ruchika Pande1, Devaki Kulkarni2, Akhil Shaji3, Shweta Patil4 and Radhika Kulkarni5

Pune Institute of Computer Technology India 1,2,3,4,5

Abstract

The act of maintaining educational records both online and on paper have become a norm. With the enforcement of lockdowns due to the Covid-19 pandemic, the education sector attempted to move their entire operations online. However with this move, various operations such as Verification of Documents, Approval of LORs have become harder to deal with in a legitimate manner. In this paper, we have compared various existing methods to deal with the problem at hand and proposed our system for the same.

ICICE2021-118

DESIGN AND SIMULATION OF ANTENNA ARRAY SYNTHESIS FOR SHAPED BEAM PATTERN GENERATION

A.M.V.N. Maruti [1] and Pabbaraju Padmaja[2]

KITS, Khammam,India[1,2]

Abstract

Shaped beam radiation patterns have wide range of applications in communication engineering and are obtained by controlling the array parameters such excitation amplitude, phase or spacing between the elements. This paper deals with synthesis of antenna array with amplitude control. A rectangular microstrip patch antenna array is designed and simulated to generate a cosecant shaped beam pattern. The excitation amplitude for each element is controlled by changing the width of connecting transmission lines. The proportionate values of the widths are calculated by using amplitude coefficients obtained by using Woodward Lawson array synthesis method. The proposed antenna array is designed and simulated in HFSS for 12 GHz. The dimensions of the antenna array are 112mmx34mmx1mm. The simulated model posses an appreciable performance metrics.

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ICICE2021-119

Design and Implementation of Women Security System using Internet of Things and Advanced RISC machine

Dr Rajeev Shrivastava[1],Dr Mohammad Javeed[2]

Bharat Institute of Engineering and Technology India[1], Sree Dattha Engineering and Science Hyderabad[2]

Abstract

Abstract: Women are now faced with many daily problems. As women are strong and unwilling to walk on the streets all night and all day, they face a lot of safety issues. In order to solve these challenges, we are designing new technologies. We use the Internet of Things (IOT) to make it possible for intelligent bands to send alerts, including locations, to nearby hospitals, police stations or registered mobile telephone numbers. A system of safety which uses a lot. An add-on called a smart stick, which includes GPS, GSM and ARM7 processors, is introduced. This GPS module tracks the location of individuals with intelligent bands. Turn the intelligent band on when the woman is threatened by pressing the power button. If activated, messages are sent to local police stations, local hospitals and registered mobile phone. When activated, it is sent automatically

ICICE2021-120

Utility-Oriented Federation of Cloud Computing Environments Through Different Application Services

Dr Rajeev Shrivastava

Bharat Institute of Engineering and Technology India

Abstract

This paper presents the vision, challenges, and architectural elements of Inter-Cloud for the utility-oriented federation of Cloud computing environments. The proposed Inter Cloud environment supports the scaling of applications across multiple vendor clouds. We have validated our approach by conducting a set of rigorous performance evaluation studies using the Cloud Sim toolkit. The results demonstrate that the federated Cloud computing model has immense potential as it offers significant performance gains as regards response time and cost-saving under dynamic workload scenarios.

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ICICE2021-121

Study on one way successful data communication probability of Energy Harvesting Cognitive Radio Network with Spatially Random Primary Users along with Spectrum Sensing

Srinivas Srinivas1 and Anirban Kanungoe2

Bharat Institute of Engineering and Technology India 1,2

Abstract

This paper studies [1-4] different advancements that have occurred in the domain of spectrum sensing in cognitive radio networks and energy harvesting for wireless signal transmissions. The paper critically analyses some of the seminal papers in this area. The paper tries to provide suitable research directions in this area on which future research may be conducted.

ICICE2021-122

DEEP LEARNING APPROACH TO ANALYSE, DETECT AND CLASSIFY CORONAVIRUS (COVID-19) PATIENT

Dinesh Sharma[1], Anil Kumar Sahu[2] and Harish Kumar Shakya[3]

Amity University Gwalior India [1,3] and Bharat Institute of Engineering an Technology Hyderabad India[2]

Abstract

we have presented an early-stage classification model to classify between the COVID and non-COVID patients. World health organization (WHO) and many governmental and private organizations have presented a significant approach in solving the world pandemic problem. In this research paper, we have done the analysis, detection, and classification of covid-19 with the help of the different worldwide chest x-ray datasets and for the prediction, we have used different updated statics of covid-19 cases all over the world. The dataset consists of different covid and non-covid patient's x-ray detail which will further used for classification purposes using different machine learning approaches like image filtration, image enhancement, feature extraction, and detection and evaluation. We have introduced a deep learning classification approach using the Convolution neural network (CNN) methodology.

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ICICE2021-123

TF-IDF Based Movie Recommendation Using Content Based Filtering

Saurabh Sharma[1], Anil Kumar Sahu[2] and Harish Kumar Shakya[3]

Amity University Gwalior India [1,3] and Bharat Institute of Engineering an Technology Hyderabad India[2]

Abstract

Recommender systems in today's world play a vital role in suggesting items to users based on their preferences. With the vast use of the internet, we are flooded with data so getting the right recommendation as per our interest becomes a necessity. In this paper, we present a machine learning approach for a movie recommendation framework applied with content-based filtering using TF-IDF. So far, several works have been done on recommender systems, still, there is always a scope for innovation in this field. Our proposed model will consider genres as an important parameter for a recommendation. For finding similarities between movies our model uses similarity coefficients like Euclidean, Cosine, Pearson Correlation, etc. Finally, we evaluate our model with kNN.

ICICE2021-127

Arduino based Rain Detection System

E Phanisree[1], K. Rachana [2], G. Pramod Yadav[3], Dr. Sanjay Kumar Suman [4] and L. Bhagyalakshmi[5]

Bharat Institute of Engineering and Technology, Hyderabad India[1,2,3,4] and Rajalakshmi Engineering College, Chennai, India[5]

Abstract

By connecting Arduino with Rain Sensor, one can easily build a simple Rain Detection System. The sensor detects rain and the Arduino development board detects it and takes the necessary actions. Such systems can be used in a variety of fields, including agriculture and automobiles. Rain detection can be used to automatically adjust the irrigation process. In addition, continuous rainfall data helps farmers use smart systems to automatically water their crops only when absolutely necessary. Similarly, in the automotive sector, rain detection systems can be used to fully automate wipers. In addition, the home automation system can also use the rain detection feature to automatically close the windows and adjust the room temperature. In this work, with a buzzer it is easy to build a basic rain sensor using Arduino. The rain sensor module is also called a raindrop sensor, rain gauge sensor, or rain sensor depending on the application, but all of them refer to the same sensor used in this project and operate on the same principle. We also made a simple rain alarm and automatic wiper with just a 555 timer, if one don't want to use Arduino. This project is building the Arduino rain gauge.

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ICICE2021-128

Fake News Detection System: A Review of Different Model

Zahir Abbas Khan[1]and Dr Rekha V[2]

Maulana Azad National Urdu University Polytechnic India[1] and Christ University Bangalore india[2]

Abstract

The Web service and social media platform producing huge data and the news articles can be obtained very quickly, easier and effortless. Peoples are spending more time on social media and reading the news which is updating very quick and peoples are unconcerned about the authenticity of the news and also social media users are showing their sentiments and reacting so early that no one cares about the checking the authenticity of the news and news origin. Some peoples are intentionally spreading fake news for the benefits of some individuals and some organizations. This paper aims to review the different fake news detection models available and its performance and methodology.

ICICE2021-129

A Novel Structure of Elmore Delay Model

A. Kranthi Goud[1], K. Vikas Kumar[1], N. Shirisha[1], P. Dakshatha[1], Sanjay Kumar Suman[1], L. Bhagyalakashmi2

[1.] Dept. of ECE, Bharat Institute of Engineering and Technology, Hyderabad, India

[2.]Dept. of ECE, Rajalakshmi Engineering College, Chennai, India

Abstract

In this brief, we present a simple close-formdelay estimate, based on first and second order moments that handle arbitrary voltages and conductance effects for a lumped and distributed line. This proposed model introduces a simple tractable delay formula by incorporating conductance (G) into Resistance,Capacitance (RC) network by preserving the characteristics of the Elmore delay model. The RCG model attains quick steady state condition and the accuracy of the interconnect delay estimates can be improved by deploying the conductance effect. Thesimulation results shows the proposed interconnect scheme performance is better than the existing in terms of delay, power and the figure of merit. The performance analysis depicts that the proposed scheme has improved itsfigure of merit with minimum and maximum of 21.12% and 49.13%. The analysis is validated through extensive simulations on a 250 nm CMOS technology.

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