A

TWO-DAY

NATIONAL CONFERENCE

ON

RECENT ADVANCES IN

SCIENCE AND ENGINEERING

RAiSE 2023

5th -6th AUGUST

THE BOOK OF ABSTRACTS

Message from President

I am extremely happy that GVPCEW is organising a Two-Day conference in which Industry and Academia from all across the state of Andhra Pradesh and Telangana are attending. I am also happy to learn that a Book of Abstracts of the conference is being released in the inaugural session. This book captures the essence of the knowledge, innovation, and collaboration that unfolded during the conference.

The 'Book of Abstracts' stands as a testament to the remarkable work presented by each author. Their contributions have enriched our understanding of diverse fields and have opened new avenues for research and development. This publication is a valuable resource that will inspire future generations of researchers and scholars.

I extend my heartfelt gratitude to all the authors who have meticulously prepared their papers, distilling their research into concise and insightful summaries. Your dedication and passion for your respective areas of expertise are evident in the quality of the content we have gathered.

I also wish to express my sincere appreciation to the organizing committee, the reviewers, and everyone involved in the publication process. Your dedication and commitment to ensuring the highest standards have made this endeavour possible.

As we disseminate this 'Book of Abstracts' to a wider audience, we not only celebrate the achievements of this conference but also encourage further exploration and collaboration in our respective fields. Let us take pride in the knowledge shared and the connections made during this event, knowing that our collective efforts will pave the way for progress and positive change.

I encourage all participants to continue building on the momentum gained during the conference. Let us remain engaged, continue to seek solutions to global challenges, and strive for excellence in our pursuits.

With warm regards

Prof. Dr. Ing. PS Rao
President
Gayatri Vidya Parishad

Message from Vice President

I am delighted to witness the commendable efforts of GVPCEW in hosting a two-day conference, which has attracted participants from the industry and academia. It gives me great pleasure to know that a ‘Book of Abstracts’ for this conference is being released during the inaugural session. This publication beautifully encapsulates the knowledge, innovation, and collaborative spirit that have flourished throughout the event.

It gives me great pleasure to announce the publication of the 'Book of Abstracts' that encapsulates the essence of our remarkable conference.

Readers will witness an extraordinary display of intellectual prowess and a profound commitment to advancing knowledge in various fields. The 'Book of Abstracts' serves as a lasting record of the remarkable research, innovative ideas, and insightful contributions presented during the conference.

I extend my heartfelt gratitude to all the authors who submitted their papers and showcased their exceptional work. Your dedication to excellence has enriched our academic community and promises to make a lasting impact on the world.

Moreover, I would like to express my appreciation to the organizing committee and all the volunteers who worked tirelessly to ensure the success of the conference and the compilation of this book. Their unwavering support and efforts have been instrumental in preserving the valuable knowledge presented in the conference.

I am confident that the 'Book of Abstracts' will serve as a valuable resource for researchers, scholars, and students alike, inspiring further research and collaboration in the future. Its availability will also enable those who were unable to attend the conference to benefit from the wealth of expertise presented here.

I encourage all readers to share the book with the colleagues, institutions, and networks, spreading the knowledge gained from this exceptional event far and wide.

With warm regards

Shri D Dakshina Murthy
Vice President
Gayatri Vidya Parishad

Message from Secretary

I am pleased to express my happiness for the efforts put forth by GVPCEW in organizing this remarkable Two-Day national conference, bringing together Industry and Academia. The widespread participation in this event is truly a testament to its significance and impact. I am also elated to know about the release of the ‘Book of Abstracts’ during the inaugural session. This publication serves as a comprehensive repository of the knowledge, innovation, and collaboration that blossomed throughout the conference. It is a testament to the collective expertise and dedication showcased by the participants.

The 'Book of Abstracts' stands as a evidence to the intellectual vibrancy and dedication displayed throughout the conference. It encapsulates the spirit of inquiry, the pursuit of knowledge, and the collaborative efforts that define our academic community.

I commend all the researchers, scholars, and experts who have contributed their papers to this publication. Your dedication to advancing your respective fields is truly inspiring, and your work contributes significantly to the body of knowledge that shapes our world.

I extend my heartfelt appreciation to the organizing committee for their meticulous planning and tireless efforts in bringing this conference to fruition. Their commitment has ensured a seamless and enriching experience for all participants.

This 'Book of Abstracts' not only serves as a valuable record of the conference proceedings but also as a source of inspiration for future generations of researchers. I encourage you all to disseminate the knowledge contained within these pages, fostering further collaboration and driving progress in our respective disciplines.

As we move forward, let us carry with us the spirit of inquiry, the passion for discovery, and the commitment to making a positive impact on society. Our collective efforts have the power to shape a brighter and more sustainable future for our nation and the world.

I would like to express my heartfelt gratitude to each one of you for your active participation and for making this conference a resounding success.

Let us continue to build on the connections made here and forge new collaborations that will drive innovation and progress.

With warm regards

Prof. P Somaraju
Secretary
Gayatri Vidya Parishad

Message from Principal

It brings me great joy to witness the diligent efforts of GVPCEW in organizing an exceptional Two-Day conference, attracting participants from both Industry and Academia. The wide-ranging attendance reflects the significance and impact of this event. Equally delightful is the news of the release of the 'Book of Abstracts' during the inaugural session. This compilation serves as a comprehensive record, capturing the essence of the profound knowledge, innovation, and collaborative spirit that permeated the conference. It stands as a testament to the collective expertise and dedication of all involved.

I am deeply humbled by the unwavering commitment and dedication exhibited by all the contributors in pursuit of knowledge and innovation. The abstracts presented in this book are a reflection of countless hours of hard work, critical thinking, and relentless passion for excellence.

Within these pages, we find a diverse array of research topics and breakthrough ideas, each contributing to the advancement of knowledge in their respective domains. From cutting-edge scientific discoveries to innovative solutions addressing real-world challenges, this Book of Abstracts serves as a valuable repository of the intellectual wealth.

I firmly believe that the future of our society lies in the hands of individuals, who dare to dream big and push the boundaries of human understanding. The contributions to this book are not merely entries on paper; they represent stepping stones towards a brighter, more sustainable, and equitable future.

I would also like to extend my heartfelt appreciation to the organizing committee, whose efforts have made this publication possible. Their dedication and meticulousness in curating these abstracts have been exemplary. I encourage all readers to delve into the abstracts presented here, engage in conversations, debates, and dialogues that spark new ideas and collaborations. Let this Book of Abstracts be a catalyst for further exploration, innovation, and knowledge dissemination.

As we celebrate the unveiling of this invaluable resource, I am filled with hope and optimism for the profound impact that our collective efforts will have on society. Together, let us continue to strive for excellence in education, research, and service, leaving an indelible mark on the world around us.

Thank you for being a part of this remarkable National Conference RAiSE, and I eagerly look forward to witness the transformative impact of the published work in the years to come.

Wishing you all the very best in your academic pursuits and beyond.

With warm regards

Prof. Dr. Raj Kumar Goswami
Principal
GVPCEW

Message from Vice Principal

Data driven methods play an important role in almost all areas of science, engineering and technology. It is very important that researchers working in related areas come together, discuss their findings and deliberate on various aspects to create avenues for inter and trans-disciplinary research. In this aspect RAiSE - 2023, we hope will provide such a forum for the researchers.

It gives us immense pleasure to present the Book of Abstracts that is a culmination of the work presented in the conference. I extend my deepest appreciation to all the authors who contributed their papers, as well as the organizing committee and volunteers who worked tirelessly to make this conference a resounding success. Your passion for academia and commitment to excellence have elevated the standards of this event, making it a remarkable platform for the exchange of ideas.

As we move forward, let us carry the spirit of this conference in our hearts, nurturing the connections made and applying the insights gained to drive meaningful change in our respective fields.

With warm regards,

Dr. G Sudheer

Vice Principal

GVPCEW

Message from Organising Secretary

On behalf of the organising committee, it is my pleasure to present the 'Book of Abstracts', a culmination of the remarkable conference proceedings. We are delighted to have received an overwhelming response, with 107 high-quality papers submitted by enthusiastic researchers and scholars from diverse fields.

This 'Book of Abstracts' stands as a testimony to the collective effort and dedication of all involved. It represents the culmination of months of hard work, planning, and coordination to ensure that this conference would be a resounding success. I extend my heartfelt gratitude to all the authors who shared their insightful research, as well as to the reviewers who diligently evaluated each submission.

I am thrilled to announce that we have an impressive turnout for the conference, with 120 participants from various institutions and organizations. The diversity of perspectives and expertise that each participant brings is a true reflection of the collaborative spirit that drives us forward.

As you browse through the 'Book of Abstracts', I hope you find inspiration in the innovative ideas and ground breaking research presented within. May this compilation serve as a valuable resource for your future endeavours and spark new collaborations that will lead to further advancements in your respective fields.

Together, let us carry forward the spirit of knowledge-sharing and collaboration, creating a positive impact on the academic community and beyond.

With warm regards,

Dr. PVS Lakshami Jagadamba

Organizing Secretary

RAiSE - 2023

Message from Head of the Department

It gives me immense pleasure to note that GVP College of Engineering for Women is organizing a Two-Day National Conference on Recent Advances in Science and Engineering "RAiSE-2023" during 5th - 6th August 2023. I am sure that this conference will provide an excellent platform for academicians, scientists, and research scholars to discuss all recent trends in science and engineering.

I wish "RAiSE-2023" a grand success.

With warm regards,
Dr. P. Murali Krishna Prasad,
Associate Professor, HoD - ECE,
GVP College of Engineering for Women.

Message from Head of the Department

It is a great honour for me as a Head of the Department of EEE to welcome all the delegates and participants for the two-day national Conference on Recent Advances in Science and Engineering (RAiSE) – 2023. Intelligence is a human trait and each human is trying to import that intelligence into machines. Intelligent machines can understand, see and respond to the situations. The academia can contribute to society through their contribution towards Intelligence.

The National Conference is a platform to share ideas on Intelligence in Science, Engineering, and Humanities. I hope the deliberations and discussions in the conference will be helpful for the academia and research. I appreciate all the authors for their exemplary contribution in various topics like Power Electronic applications, Integration of Microgrids with renewable energy sources, Electric Vehicles etc. I would extend my gratitude to all the invited chairs, plenary speakers and the organizers for their collective contribution and preparation for the event. I am sure the participants of this National Conference will gain in-depth knowledge and its applications. I wish all success in this endeavor.

With warm regards,
Dr. R.V.S Lakshmi Kumari,
Associate Professor, HoD - EEE
GVP College of Engineering for Women.

Message from Head of the Department

It is with great pleasure and excitement that I offer my greetings to all the stakeholders in the National Conference 'Recent Advancements in Science and Engineering – RAiSE-2023', which is being held in GVP College of Engineering for Women on August 5-6, 2023. It is pleasant to see all the departments of the institution to come together, hand in hand, to organise this significant conference.

I understand that many papers have been submitted, peer-reviewed and accepted for this conference and suited ones are going to be published in the prestigious STM Journals.

It is a great occasion and opportunity for the faculty members and students to meet with talented and experienced speakers from IT industry and academia to realize the needs of the industry and sharpen their skills accordingly. Also, listening to the presentations of researchers will make them to change their approach towards the changes that are taking place in the current digital era.

The hard work done by the Convenor Dr. PVSL. Jagadamba, members of various committees and the suggestions provided by the patrons, Principal Dr. R. K. Goswami sir and Vice Principal Dr. G. Sudheer sir since the last 10 months surely reflect in the way the conference has been planned and being held.

The Department of IT has also had its say in this commendable work and through this message I congratulate the faculty members and students of the department for the effort that they have put in to make the conference a grand success.

I once again offer my congratulations for everyone associated with this prestigious conference and hope that this will lay the path for many other works that are being planned to be held in the future by the institution.

With warm regards,
Dr. M. Bhanu Sridhar,
Associate Professor, HoD - IT
GVP College of Engineering for Women.

Message from Head of the Department

I am happy to note that a Book of Abstracts of the conference **RAiSE-2023** is being released in the inaugural session.

Within the pages of the book, readers will find a diverse array of subjects, representing a wide range of fields and disciplines, including Science & Technology. Each abstract is a glimpse into the innovative research, groundbreaking ideas, and insightful findings presented by our esteemed contributors.

This book embodies the spirit of collaboration and intellectual curiosity that defined the conference. It serves as a valuable resource for scholars, researchers, and practitioners alike, offering a wealth of inspiration and potential for further exploration.

Our sincere appreciation also goes to the organizing committee and all those who supported for the success of the conference. Their tireless efforts have made this publication possible, allowing us to preserve the essence of this exceptional event.

I hope this Book of Abstract is as enlightening and inspiring as the conference itself. May the knowledge shared here spark new ideas, collaborations, and endeavors that contribute to a brighter and more sustainable future.

With warm regards,
Dr. K. L. Sai Prasad,
Associate Professor, HoD - BS&H
GVP College of Engineering for Women.

Message from Head of the Department

The Gayatri Vidya Parishad College of Engineering for Women offers a B. Tech program in Computer Science and Engineering (Artificial Intelligence and Machine Learning). This program aims to provide students with a strong foundation in the principles and techniques of AI and ML, as well as hands-on experience in applying these technologies to real-world problems. Graduates of this B. Tech program will be able to work on interdisciplinary projects in a variety of industries as data analysis, software development, and research.

As a Head of the Department of CSE (AI&ML), it is a great honour to welcome all the delegates and participants for the two-day National Conference on Recent Advances in Science and Engineering (RAiSE) – 2023. Organizing such a National Conference gives a platform to share ideas in Science, Engineering, and Technologies. The deliberations and discussions to happen at this conference will be helpful for academia and researchers. This will achieve our aims and we will be able to pass all those thought processes to be discussed during the conference to esteemed students who joined the department. I would extend my gratitude to all the invited chairs, speakers, and organizers for their collective support and preparation for the event. I am sure the participants of this National Conference will meet their fullest expectations. I wish you all success in this endeavour.

With warm regards,
Dr. Dwiti Krishna Bebarta
Associate Professor, HoD-CSE (AI & ML),
GVP College of Engineering for Women.

Distinguished Invitees

Commodore Rajeev John
Command Electrical Officer, Eastern Naval Command,Visakhapatnam

Sri. Sitarama Penumatsa
General Manager, Candela Technologies India Pvt. Ltd., Chief Technology Officer, Candela Technologies USA Inc

Sri Rama Krishna Prasad
CEO, Aavarna Technologies ,Hyderabad

Mrs. Vijayalakshmi Raghavan
Director - Solutions , Wadhwani AI, Hyderabad

Dr.P S Avadhani
Former Director IIIT Agartala, Professor & Former Principal AU College of Engineering(A) Andhra University .

Sri Pyala Prasada Rao,
Founder & CEO, Sajix Inc.,USA

Sri Venkatesh Tadinada
Data Scientist and AI Evangelist, Founder Solivar Labs, CEO CloudKarya California USA

Dr.P.PRAPOORNA ROJA
Professor ,Department of CSE GVPCE(A)

Dr.Shashi Mogalla
Professor , Department of CSSE, Andhra University

Prof K Venkat Rao
Professor & HOD, Department of CSSE, Andhra University

Dr. P. Rajesh Kumar
Professor & HOD, Department of ECE Andhra University

Dr.J Vasundhara Devi
Professor, GVP-LIAS GVPCE, Visakhapatnam.

Dr. Veera Malleswara Rao
Professor, Department of ECE, Andhra University

Dr.K V Ramesh
Sr. Prof. in Physics, GITAM Inst. of Sciences, GITAM University.

Dr.CH V V S Bhaskar Reddy
Professor, Department of EEE, Andhra University

Dr. K Rama Sudha
Professor, Department of EEE, Andhra University

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BLOCK CHAIN BASED SUPPLY CHAIN FOR GRADING THE MILK QUALITY USING MACHINE LEARNING TECHNIQUES

[1]Sharmili Nukapeyi , [2]R

ajeswari Bommala

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ABSTRACT

Milk is a primary source of nutrition in practically every country on the globe. Milk is widely packaged in a variety of containers such as packages, cans, glass bottles, and pet bottles. Milk, on the other hand, has a limited period for the customer to use it because it has an expiration date. Even if the expiration date was cleared, the milk could have spoiled due to how we stored it after the first container was opened. Many research works were proposed in the past to investigate milk spoilage and staleness issues. To determine the purity percentage in raw milk, the Fraud Detection Algorithm is employed. This paper analyzes the Machine Learning (ML) approaches towards milk spoilage and staleness detection systematically. The category of the detection system, sensor technology, image processing technique, and Machine learning technique will be discussed. The paper also provides an idea on the existing methods used by the previous researchers in their work. Finally, this paper will conclude the milk spoilage and prevent the spoilage percentage in advance.

CNN-BASED APPROACH FOR EFFICIENT BELL PEPPER LEAF DISEASE RECOGNITION

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[1]Professor&Head, Department of CSE, GMRIT Rajam.

[2]Assistant Professor, Department of CSE, RGUKT, Srikakulam.

ABSTRACT

Convolutional Neural Networks (CNNs) have achieved remarkable results in the detection of diseased plant leaves, providing highly accurate predictions. This project presents an in-depth analysis of current systems for plant-based disease detection. Using CNN trained on a dataset of bell pepper plant images, various simulation approaches for neurons and layers were employed. Plant diseases have significant impacts on agricultural productivity, leading to economic losses, reduced crop quality, and decreased yield. Consequently, the timely detection of plant diseases in large crop fields has garnered increased attention. By obtaining reliable data on plant health and accurately identifying diseases, effective management strategies can be implemented to mitigate the spread of diseases. Therefore, our model plays a crucial role in the classification of healthy and diseased bell pepper plant leaves. In this context, it is highly recommended to promptly remove any infected plants to prevent the spread of disease throughout the entire garden. Taking immediate action upon identifying issues with the pepper crop helps minimize further contamination and ensures better overall crop health. (By using Convolutional Neural Networks (CNN) we obtained maximum accuracy of 99.99 %.)

COMPREHENSIVE ANALYSIS OF MALEVOLENT ATTACKS AND SECURITY CHALLENGES IN UNAUTHORIZED ACCESS TO IOT DEVICES

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[1] Centurion University of Technology, Vizianagaram.

[2] Mohan Babu University, Tirupati.

[3] Raghu Engineering College(A), Visakhapatnam.

ABSTRACT

This paper provides an in-depth exploration of malevolent attacks targeting Internet of Things (IoT) devices and the associated security issues stemming from unauthorized access. It presents a detailed examination of different types of attacks, including data theft, device malfunctions, and the dissemination of false results. The paper also addresses the security concerns raised by unauthorized attacks and proposes effective solutions. Furthermore, it offers comprehensive insights into safeguarding IoT devices and data, presenting advanced preventive measures to counter malevolent and unauthorized attacks.

DATASET GENERATOR

[1]Abhishek Peddada, [1]Tarun Yegireddy, [1]Varaprasad Songa,

[1]Karthik Yandamur, [1]Naveen Madugulla

[1]Students of CSE(AI &ML) Of GVPCE(A),Visakhapatnam.

ABSTRACT

This article intends to represent the heart of the project "Dataset Generator", that is created using technologies like API, Web scraping and Prompt engineering. API or Application Programming Interface is utilized to transfer the data from a webpage to the explorer's console making it accessible for the user to attain direct control over the web's data through explorer page. Web scraping is the process of using bots to extract content and data from a website. Libraries such as BeautifulSoup and urllib3 are used to perform this process. Prompt engineering is a technique used in artificial intelligence (AI) to optimize and fine-tune language models for particular tasks and desired outputs.

DEVELOP INSTITUTIONAL CHATBOT USING DEEP NEURAL NETWORKS AND NLTK

[1] N. Sowjanya Kumari, [2]P.V.S.L Jagadamba .

[1]Research Scholar, A. U. TDR-HUB, Andhra University, Visakhapatnam

[2] Gayatri Vidya Parishad College of Engineering for Women, Kommadi, Visakhapatnam

ABSTRACT

Chatbots are intelligent software that can communicate and perform actions similar to those of a customer service representative. Chatbots are widely used for customer interaction and marketing on social networking and e-commerce sites. AI-based chatbots have the core ability to learn from any question based on initial training on a predefined dataset. A web-based platform provides a broad intelligent foundation for simulating human problem solving. The technology used here is based on deep neural networks and uses NLP for text processing and FLASK functionality for internal connectivity. The evolution has improved accuracy and performance rates on higher slopes. This recommended chatbot identifies the user context that triggers the specific intent of the response. Based on dynamic responses, it instantly generates the desired response for the user. The proposed system uses deep learning algorithms to train chatbots by experiencing different user responses and requests.

ENHANCING HEALTHCARE RECORD MODELING THROUGH GRAPH CONVOLUTIONAL NETWORKS: OVERCOMING CHALLENGES AND ADVANCING DATA MANAGEMENT AND ANALYSIS

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[2] GVP College of Engineering for Women, Visakhapatnam

ABSTRACT

Modeling healthcare records data as a graph database presents various challenges due to the complex nature of healthcare information and its interconnectedness. In this study, we aim to identify the key challenges in this domain and propose solutions to address them. By leveraging machine learning techniques, we aim to enhance the efficiency and accuracy of healthcare record modeling, facilitating better data management and analysis. One suitable algorithm for addressing these challenges is the Graph Convolutional Network (GCN). GCN is a deep learning algorithm that operates on graph-structured data, making it well-suited for modeling healthcare records represented as a graph database. GCN allows information propagation between interconnected nodes, capturing the dependencies and relationships within the data. To apply GCN to healthcare record modeling, we can represent patient records as nodes in the graph, with edges indicating various relationships, such as diagnoses, treatments, and patient demographics. The algorithm can then learn the node embeddings, which encode the underlying features of each record, by propagating and aggregating information through the graph. The proposed GCN algorithm can address several challenges in modeling healthcare records as a graph database. Firstly, it can handle the heterogeneous nature of healthcare data by capturing different types of nodes and edges. Secondly, GCN can effectively capture dependencies and patterns in the data, enabling more accurate predictions and recommendations. Additionally, the algorithm can handle missing or incomplete data by leveraging the information from neighboring nodes. We

can overcome the challenges associated with modeling healthcare records data as a graph database by utilizing machine learning algorithms such as GCN. These advancements can improve the management and analysis of healthcare data, leading to better patient care, efficient resource allocation, and more informed decision-making in the healthcare domain.

NYMPHAEA LOTUS (INDIAN LOTUS) ANALYSIS WITH GENETIC ALGORITHM

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ABSTRACT

There is a significant problem on the availability for medicinal plants for treatment of various diseases. Nymphaea lotus (Indian Lotus) is one such plant which is primarily available in the indian subcontinent. This paper investigates the analysis of this medicinal plant with the help of a genetic algorithm.

VIRTUAL METHOD TO PREDICT DENTAL DISEASE

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[1]V Likhitha Sai

[1]CSE(AI & ML), GVPCE(A), Vishakapatnam, India

ABSTRACT

A Convolutional Neural Network (CNN) is a type of deep learning algorithm that is particularly well-suited for image recognition and processing tasks. It is made up of multiple layers, including convolutional layers, pooling layers, and fully connected layers. This paper suggests the method of recognizing images by using algorithms of deep learning. The idea behind this project is to make it a user-friendly interface to predict the problem they may be facing with their oral health. This model aims at high train and test accuracy for each epoch.

PREDICTIVE MODELLING FOR EARLY DETECTION OF CATARACT USING MACHINE LEARNING

[1] A.Venkata Ramana, [2]K.Ramana

[1]Professor & Head, Department of CSE, GMRIT Rajam, AP

[2]Assistant Professor, Department of CSE, RGUKT, Srikakulam, AP

ABSTRACT

Cataract is a dense cloudy area that forms in a lens of the eye because of which many people are going blind. More than 50% of people in old age suffer due to cataract and will not have a clear vision. Therefore, detecting the cataract disease at early stages is necessary in order to get rid of it by taking simple treatments. If we didn't do so, it will lead to eye surgery which is far away difficult. Therefore, we are developing a prediction system which detects the cataract disease by analyzing the eye features provided by the user. For this, we use open cv, a python library, that provides various functions for image processing and feature extraction. We made use of Machine Learning Classification techniques which are SVM, Random Forest, Logistic Regression and KNN for developing this prediction model. The ultimate goal of this project is to develop a reliable and accurate tool for early detection and prediction of cataract disease, which can help in improving patient outcomes and reducing health care costs.

REGULAR HEALTH CARE MODEL USING CNN FOR HEALTH FACTORS ANALYSIS IN INTERNET-OF-MEDICAL THINGS

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[2]IIIT-AP (RGUKT-AP), Srikakulam.

ABSTRACT

Remote health monitoring applications with the advent of Internet of Things (IoT) technologies have changed traditional healthcare services. Additionally, in terms of personalized healthcare and disease prevention services, these depend primarily on the strategy used to derive knowledge from the analysis of lifestyle factors and activities. Through the use of intelligent data retrieval and classification models, it is possible to study disease, or even predict any abnormal health conditions. To predict such abnormality, the Convolutional neural network (CNN) model is used, which can detect the knowledge related to disease prediction accurately from unstructured medical health records. However, CNN uses a large amount of memory if it uses a fully connected network structure. Moreover, the increase in the number of layers can lead to an increase in the complexity analysis of the model. Therefore, to overcome these limitations of the CNN-model, we propose a CNN-regular target detection and recognition model based on the Pearson Correlation Coefficient and regular pattern behaviour, where the term ‘‘regular’’ denotes objects that generally appear in similar contexts and have structures with low variability. In this framework, we develop a CNN-regular pattern discovery model for data classification. First, the most important health-related factors are selected in the first hidden layer, then in the second layer, a correlation coefficient analysis is conducted to classify the positively and negatively correlated health factors. Moreover, regular patterns’ behaviours are discovered through mining the regular pattern occurrence among the classified health factors. The output of the model is subdivided into regular-correlated parameters related to obesity, high blood pressure, and diabetes. Two distinct datasets are adopted to mitigate the effects of the CNN-regular knowledge

discovery model. The experimental results show that the proposed model has better accuracy, and low computational load, compared with three different machine learning techniques methods.

REMOTE HEALTHCARE DIABETIC RETINOPATHY DETECTION USING DEEP LEARNING

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[1]GVPCE(A), Visakhapatnam.

ABSTRACT

Diabetes Mellitus (DM) is a metabolic disorder characterized by high blood sugar levels, leading to complications such as Diabetic Retinopathy (DR) that causes vision loss. DR symptoms include abnormal blood vessels, fluid leakage, exudates, hemorrhages, and microaneurysms in the retina. Medical imaging plays a crucial role in precise diagnosis, but its evaluation remains complex. Recent advancements in computer vision and Deep Neural Networks have shown promise in accurately analyzing medical images. This project focuses on fundus images of diabetic retinopathy, aiming to develop an automated knowledge model using OpenCV, Convolutional Neural Networks (CNN), and Keras to identify key factors associated with DR. The goal is to enhance the efficiency and accuracy of diagnosing DR through automated image analysis.

SAFETY ALERT INDICATIONS IN TRANSPORT SYSTEM THROUGH VANET

[1]Ganga Bhavani Randhi, [1]D. Uma Devi

[1]GVPCE(A), Visakhapatnam.

ABSTRACT

The VANET is one of the wireless communications and it is subgroup of MANET. The rapid growth in wireless communications made inter-vehicular communications (IVC) and Road-vehicular communications (RVC) possible in Mobile AD-Hoc networks. The next stage of MANET is VANET. In this paper my view is to maintain the security of drivers. By using VANET to avoid accidents and collisions. The safety message packets are broadcasted by one control channel. It is known as CCH. Some service channels are worked under this control channel used to transmit data.

TELUGU NEWS CLASSIFICATION USING NATURAL LANGUAGE PROCESSING

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ABSTRACT

News classification is a critical task in natural language processing (NLP) that involves categorising news articles into predefined classes or topics. With the exponential growth of digital news sources, automated techniques are needed to effectively organise and categorise news content. This study proposes a deep learning approach for news classification using NLP techniques. Experimental results on a large-scale news dataset demonstrate the effectiveness of our proposed approach, achieving state-of-the-art accuracy in news classification. The findings of this research contribute to advancing the field of news classification and provide valuable insights for practical applications. This study shows that supervised learning algorithms (Naive Bayes (NB), Support Vector Machine (SVM), Artificial Neural Network (ANN), and N-gram) performed better for News Classification task.

A RECURSIVE MULTISTAGE ESTIMATOR FOR PASSIVE TARGET TRACKING IN ESM EW SYSTEMS

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[1]Vignan's Institute of Engineering for Women, Visakhapatnam

[2]GVP College of Engineering for Women, Visakhapatnam

ABSTRACT

Recursive Multistage Estimator is a suitable algorithm for passive target tracking applications. Nardone, Lindgren and Gong introduced this approach using batch processing. In this paper, the batch processing is converted into sequential processing for real time applications like passive target tracking using bearings-only measurements. Adaptively, the variance of each measurement is computed and is used along with the measurement, such that the effect of false bearings can be reduced. The transmissions made by radar on a target ship are assumed to be intercepted by an EW system of ownship. The generated bearings in intercept mode are processed through Maximum Likelihood Estimator to find out target motion parameters. Instead of assuming some arbitrary values, Pseudo Linear Estimator outputs are used for the initialization of MLE. The algorithm is tested in Monte-Carlo simulation and its results are presented for two selected scenarios.

REAL WORLD POTHOLE DETECTION USING IMAGE PROCESSING AND DEEPLEARNING CNN MODEL

[1]P.Sridevi, [1]R.Prasanna Kumari

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ABSTRACT

Pot holes are a major problem of concern in many parts of the cities acrossthe country. Road accidents are one ofthe causes that significantly affect the humanity and results in damage of vehicles and road surface. Potholes are dangerous for pedestrians who walk along the road and also vehicular traffic on busy roads. Road accidents are caused due to improper maintenance of roads and it is imperative to attend such hazards. Potholes should be maintained continuously to assure a minimal loss of losing lives and for the welfare of community. The primary goal of this study is to build a CNN model that identifies two classes by extracting region of interest (ROI) with minimum computational resource usage. Convolutional Neural Network (CNN), a deep learning technique is being proposed to be used for image segmentation and classification. ReLU activation function is used for classifying the input image and CNN model for feature extraction. The obtained accuracy is 86.77% on a dataset containing 1157 images, through which it can be deduced that the above said image processing technique is applicable under different circumstances. In this process when a user uploads the image of a pothole the CNN model will detect whether the image contains pothole or not. If the pothole is detected then the image isconverted to 3D image to find the depth of a pothole above a threshold value. Finally the information will be shared to government authorities to perform necessary action to ensure that no discrepancies might occur.

SECURE APPROACH FOR CROSS-CHAIN TRANSACTIONS USING MACHINE LEARNING MODEL

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ABSTRACT

The ability to conduct transactions or transfer assets between different blockchain networks referred as Cross-Chain transactions. It enables users to transfer assets from one blockchain network to another. In the Cryptocurrency ecosystem, the risk of fraudulent activities has become a significant concern. Due to these fraudulent activities, the Cross-Chain transactions have encountered challenges in terms of security and integrity. The need for robust fraud detection mechanisms becomes crucial to secure the integrity of transactions and protect investors from fraudulent activities. Detecting those fraudulent activities and preventing them is a challenging task due to the decentralised and pseudonymous nature of these digital assets. Machine Learning algorithms emerged as a power tool for fraud detection across various domains. This paper proposes a novel secure approach for fraud detection in cryptocurrency transactions by leveraging machine learning algorithms. Our proposed methodology is to identify malicious activities and discern fraudulent transactions from legitimate ones. The machine learning models are trained on labelled datasets comprising both fraudulent and legitimate transactions by allowing them to learn patterns and detect anomalies indicative of fraudulent behaviour. This proposed methodology contributes to the growing body of knowledge in cryptocurrency fraud detection and acts as a foundation for developing robust security measures and risk mitigation strategies in order to make the Cross-Chain transactions much stronger.

EXAMEVAL

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ABSTRACT

This project aims to develop a model that combines text summarization techniques with Optical Character Recognition(OCR) using OpenCV to correct exam papers by summarizing handwritten answers provided by students. The model addresses the challenge of grading handwritten scripts by automatically converting the hand written text into machine readable format and generating concise summaries that match the corresponding teacher's answer summary. By leveraging OCR capabilities, the model extracts text from handwritten images and preprocesses it to improve readability and accuracy. Subsequently, text summarization techniques are applied to condense the extracted text in to coherent and informative summaries. The integration of OCR with text summarization provides an efficient and automated solution for correcting handwritten exam papers, saving time and effort for teachers. This model can enhance the grading process, provide consistent and un biased evaluations, and offer valuable insights into students' performance by matching their answer summaries with those prepared by the teacher.

COMPARATIVE STUDY OF CLASSIFIERS FOR MONITORING FAKE REVIEWS OF ONLINE PRODUCTS USING OPINION MINING

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ABSTRACT

With the increasing popularity of e-commerce, online dealers seek reviews or opinions from customers regarding the quality and service of their sold products. As the number of customer reviews grows rapidly, potential buyers face difficulties in reading and assessing them to make informed decisions. Unfortunately, some review websites include fake positive reviews, either added by the product companies themselves or submitted by users who haven't made a purchase. This situation makes it challenging for users to distinguish genuine reviews from fake ones, leading to a misleading impression of products and potentially impacting online sales negatively.To address this issue, an essential system called "Fake Review Monitoring" is necessary for E-Commerce websites. In this study, we propose three classifiers: Random Forest, Naïve Bayes, and Support Vector Machine (SVM) to detect fake reviews. Through a comparative study of these classifiers, we measure their performances and determine the best classifier. The results demonstrate that the SVM classifier outperforms the other two, making it a promising choice for detecting fake reviews effectively.

RDTP: RELIABLE DELAY TIME PROTOCOL WITH DUTY CYCLE OPTIMIZATION IN 6LOWPAN-WBAN

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ABSTRACT

Medium access control (MAC) protocols based on the adaptive duty cycle and the IEEE 802.15.4 standard have recently been proposed to address the Quality of Service (QoS) requirements of wireless body area sensor networks. These QoS requirements include time-bound data transmission services, data rate, reliability, and energy consumption. Providing a comprehensive set of QoS is difficult with the present protocols, though. Additionally, these protocols modify duty cycle values based on estimates like active periods, buffer occupancy, and collision rates, resulting in reduced energy usage. These estimates are time-consuming and energy-intensive, making them unsuitable for use in medical settings. We present a tele-medicine protocol (RDTP) for use with IEEE 802.15.4 slotted CSMA/CA in beacon-enabled mode, optimized duty cycles based on fine-tuning MAC layer parameters. Network traffic availability, delay-reliability, and super frame duration are the three parameters that influence the RDTP's operational schedule. Patient monitoring applications necessitate a set of QoS, and the proposed protocol provides all three at once: low latency, high uptime, and low power usage. By altering the number of nodes in the network and the amount of traffic offered, we may calculate the performance of the proposed protocol according to metrics such as average end-to-end delay, dependability, packet delivery ratio, collision rate, and energy usage. When compared to other current protocols within the limitations of patient monitoring applications, the RTDP fared well in terms of delay, dependability, energy usage, and collision rate.

PREDICTION OF PROSTATE CANCER USING BOOSTING TECHNIQUE

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ABSTRACT

There are many diseases that are associated with humans some diseases might be associated with only males or only females. This paper shows and discuss the disorder that is associated mainly in men. Prostate Cancer is nearly associated with the example of illness. Usually when the damaged cells develop in the prostate gland there occurs prostate cancer. These cells increases uncontrollably. Reports given by the researchers show that this is most dangerous disease that is increasing in men day by day. There are different research works done by the researchers using different techniques to get a solution for this major problem. As it is a dangerous disorder , there is a medical research are serving hard to increase the prediction of prostate cancer in the field of medical diagnosis, the main aim is to increase the prediction is still open for contribution. There are many machine learning techniques used by the researchers to forecast and solve the issues in the prediction of the prostate cancer. This paper approached these challenges by using a new technique in the machine learning boosting techniques by using the algorithm xg boost when compared to the previous algorithms such as support vector machines, random forest , ada boosting to predict prostate cancer in men. Our developed model was evaluated using accuracy as performance metrics, and our result showed a prediction accuracy of 99.99%, which is a relative improvement on the existing systems.

SMART STUDENT REWARDS RECOMMENDATION SYSTEM

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ABSTRACT

In the era fast growing technology it is necessary for all the educationist to keep more focus on the students because they are the backbones of our nation. In this regard even though there are many systems that make the notation and analysis of students as the one that contribute to the student. A person usually works for the name and the money in any organization but in this regard a student works only for the outcome of his education and he is going to be the continuous learner for any organization to build up its strength. In this regard the appreciation of student work is necessary to make him success in his profession. This paper illustrates an experimental approach to how a student can gain his attention in the class keeping track of all the records that make his progressive development and imparting regards to his work.

AUTOMATIC DETECTION OF MISPLACED TUBES AND CATHETERS USING EFFICIENT NET B7

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ABSTRACT

Tube misplacement can lead to complications in patients together with serious medical malpractice cases. Critically ill patients were intubated and various medical tubes, including an endotracheal tube (ETT), were inserted to protect the airways. The Nasogastric tube (NGT) is used forfeeding, whereas the Central Venous Catheter (CVC) is utilized for a variety of medical operations. The adoption of medical protocols by doctors to ensure proper tube installation is a major issue. Misplaced tubes increase the probability of complications in patients and, in the worst of cases, even lead to mortality. So, identifying the proper positioning of tubes before starting the procedure is crucial. In this paper, we propose identify the misplaced tube and catheters detection using deep learning approach with accurate outcome.

DIAGNOSING PNEUMONIA FROM CHEST X-RAYS USING DEEP LEARNING ALGORITHMS THROUGH CONVOLUTIONAL NEURAL NETWORK, TRANSFER LEARNING AND FINE TUNING

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ABSTRACT

Pneumonia is an inflammatory condition of lungs that induces the air sacs which leads to a contagious infection of lungs. Patients who are afflicted with the virus can be saved from death and the virus can be eradicated from spreading further through effective diagnosis. Pneumonia is frequently diagnosed using a Chest X-ray. Detecting pneumonia from a Chest X-ray is typically slow and inaccurate. It is essential to identify pneumonia quickly so that patients can receive prompt care, especially in rural areas. This work proposes a system that evaluates Chest X-rays and categorizes the images using Deep Convolutional Neural Network Architecture, Transfer Learning and Fine Tuning on different CNN architectures. The algorithms implemented as a part of this work are CNN, VGG16 and Xception. Prior to building a model, Data Augmentation and Data Balancing is performed in order to improve the model's generalization performance and accuracy. Among the above-mentioned algorithms, it has been deduced that VGG16 model has returned best accuracy.

BLOCKCHAIN TECHNOLOGIES AND EDGE COMPUTING IN ORGANIC FARMING: FROM-FARM-TO-MARKET

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ABSTRACT

In today's world of growing internet-based applications and usage, blockchain technology holds the potential to significantly transform our economic, social, and environmental landscape. We are at a tipping point right now where there is a huge shift toward the legitimacy and applicability of this technology. This gives us one of the best opportunities to reimagine our lives, our economy, and the entire way we interact with each other around the world. This review paper provides an overview of the current state of applications using blockchain technology across various domains. The primary objective is to examine the existing literature and identify key research themes within each application domain. Specifically, this paper presents a systematic review of ten different applications and tools used in blockchain. The applications include in agriculture domain. Additionally, future research directions are proposed for these domains. The focus is specifically on the utilization of blockchain technology and IoT in the agriculture sector specifically in Organic Farming. In this paper, discusses the substantial benefits of blockchain in agriculture and presents a diagrammatic representation of the capabilities, enablers, and unified workflow process that blockchain technology can offer to support agriculture. Overall, this review paper aims to provide insights into the current landscape of blockchain applications and guide future research efforts in various domains, specifically in agriculture domain in organic farming.

ACCELERATING DATABASE APPLICATION DEVELOPMENT WITH JSONPOWERDB: A CASE STUDY OF STUDENT ENROLLMENT WEB FORM

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ABSTRACT

This paper presents the utilization of JsonPowerDB, a Developer-friendly Database Server with REST API services, in the context of a student enrollment web form. JsonPowerDB offers high performance, lightweight, Ajax-enabled, and serverless features, making it a powerful real-time database for dynamic websites, mobile apps, and data analytics portals. The web form was developed using frontend technologies such as HTML, CSS, JavaScript, and Bootstrap, while JsonPowerDB served as the backend for seamless data storage and retrieval. The study showcases the ease and speed of developing database applications without traditional server-side programming or database installation. With a basic understanding of frontend technologies, developers can effortlessly design and implement efficient web forms. The integration of JsonPowerDB with Java, .NET, Python, or PHP demonstrates its versatility and effectiveness in diverse server-side programming environments. The paper highlights the practical implementation of JsonPowerDB, emphasizing its role in enabling rapid development of the student enrollment web form. The performance, simplicity, and real-time capabilities of JsonPowerDB are evaluated, showcasing its suitability for modern web applications. The presented case study encourages developers to explore JsonPowerDB as a viable solution for building fast and user-friendly database applications. Index Terms—JsonPowerDB,Developer-friendly Database Server,REST API services,Ajax,data analytics portals,server-side programming.

A STUDY ON FAKE INFORMATION IDENTIFICATION AND MITIGATION

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ABSTRACT

Fake News Has Become One Of The Major Problems In The Existing Society. Fake News Has High Potential To Change Opinions, Facts And Can Be The Most Dangerous Weapon In Influencing Society. The Proposed Project Uses Machine Learning Algorithm For Detecting The 'Fake News' That Is, Misleading News Stories Which Come From The Non- Reputable Sources. By Building A Model Based On A Naïve Bayesian Classification Algorithm, The Fake News Can Be Detected. The Data Science Community Has Responded By Taking Actions Against The Problem.It Is Impossible To Determine A News As Real Or Fake Accurately.Today, The Increased Amount Of Information Sources On Internet Creates The Problem Of Information Overflow. Filtering The Relevant And Genuine Information Is Another Challenge Social Media Facing Now. Mobile Phones And Other Electronic Gadgets Became Quite Common Through Which People Get Up- To-Date Information. Verifying The Authenticity Of News Needs To Have Prime Importance Though A Difficult Task. This Paper Outlines A New Approach For Finding The Genuineness Of News Content. This Helps To Eliminate The Rumors From Spreading Through Social Platforms. Our Goal To Develop A Reliable Model That Classifies A Given News Article As Either Fake Or True By Using More Accuracy Prediction Of Logistic Regression Algorithm.By Using The Web Scraping Method, We Assemble The News Content Related To The News Posted For Checking. The News Prediction Is Done By Implementing Techniques Like Tf-Idf, And Natural Language Processing.

IMAGE ENHANCEMENT AND RED EYE REMOVAL USING HADOOP MAP REDUCE FRAMEWORK

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ABSTRACT

In recent trends, based on the environment, the quality of the digital photo may degrade by making it blurry, low contrast and also when we take pictures with flash, red eye effect may often appears in these digital photographs. To improve the quality of photograph, this paper explores Image Enhancement and Red Eye Removal algorithms using Hadoop Mapreduce Framework. The proposed algorithms can enhance the image quality and can automatically remove the red eye without manual intervention. Here, we need a framework that is an abstraction that provides generic functionality that is build to concentrate on image processing tasks. Map reduce paradigm framework allows the image to divide into clusters in order to facilitate distributed processing. We chose hadoop as it is known for its scalability, cost effective, flexibility, fast, security and authentication, parallel processing. The major advantage of MapReduce is that it is easy to scale data processing over multiple computing nodes

FAKE NEWS DETECTION BASED ON 3-HAN ARCHITECTURE USING DEEP LEARNING TECHNIQUES

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ABSTRACT

Fake News spread is a common scenario we see nowadays in this modern era of social media and smart phones. By New York Times fake news is defined as “made up story with the intention to deceive, often with monetary gain as a motive”. The problem is complex given its varied interpretations across the globe. Hence an effective system is needed to detect whether the given news is fake or real and while doing literature survey I came across various research works which has done to prevent the spread of fake news. In this project, we suggest a solution to detect fake news using machine learning algorithms and Natural language processing. Machine learning provides an effective solution to our problem and in general, all systems use machine learning techniques in one way or other. In this project, the method of attention is introduced in NLP and a new approach is introduced combined with machine learning algorithms. The approach is using a 3 layered HAN architecture which is made on the three particles of news article, i.e., words, sentences and paragraphs, in this project the efficiency of this architecture is shown on the currently used models.

ENSURING EXCELLENCE: QUALITY ASSESSMENT OF ENGLISH TEXT AND SPEECH DATA USING NLP AND ML

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ABSTRACT

The effectiveness and precision of speech processing and natural language processing (NLP) applications are substantially influenced by the quality of text and speech input. The combination of NLP and Machine Learning (ML) techniques has shown tremendous promise in recent years for improving the quality of written and verbal data. The present research enables a thorough investigation of techniques and strategies to enhance data quality using NLP and ML. The results discussed in this research provide useful insights into cutting-edge methods for combining NLP and ML to assess the quality of English data. The study promotes the reliability and efficacy of English data for various kinds of NLP and ML applications, such as sentiment analysis, information retrieval, and text categorization, and provides the foundation for additional research in this area.

AN ABNORMAL EXPRESSION DETECTION SYSTEM (AEDS) USING DEEP LEARNING ALGORITHMS

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ABSTRACT

In recent years, deep learning algorithms have shown remarkable success in various computer vision tasks, including object detection, image recognition, and segmentation. This paper presents an Abnormal Expression Detection System (AEDS) that leverages the power of deep learning algorithms to detect abnormal facial expressions in real-time automatically. The proposed AEDS consists of two main components: a deep convolutional neural network (CNN) for feature extraction and a recurrent neural network (RNN) for temporal modeling. CNN is responsible for learning discriminative features from facial images and capturing local and global information. These features fed into the RNN, which can effectively model the temporal dependencies present in facial expressions. To train the AEDS, a large dataset of facial expressions, comprising both normal and abnormal instances, is collected and labeled. Data augmentation techniques enhance the model's generalization capabilities and reduce overfitting. The deep learning model is trained using this dataset supervised, where the ground truth labels indicate normal or abnormal expressions. The evaluation of the AEDS is performed on an independent test set, and the results demonstrate its high accuracy and robustness in detecting strange facial expressions. Furthermore, the system exhibits real-time performance, making it suitable for various applications, such as security monitoring, healthcare, and human-computer interaction.

EXTRACTING CRYPTIC COMMUNITIES IN NETWORKS WITH MAXIMAL BICLIQUES USING MAP REDUCE PARADIGM

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ABSTRACT

Graphs have been widely used in areas like online social network data, information retrieval from web, bioinformatics and citation networks. Finding patterns and insights from such data can often be reduced to mine dense substructures such as cliques and bicliques from massive graphs with millions of edges. Many applications in mining such data have relied on Maximal Biclique Enumeration. In this paper, we perform mining on a large graph data set, with a basic cluster generation approach using Sequential DFS Algorithm collaborated with pruning and load balancing optimizations, along with parallelization. Its experimental results are helpful in identifying hidden communities in networks closely related by virtue of common interests.

MRAC BASED SPEED ESTIMATION OF THREE DTC TECHNIQUES FOR THREE-PHASE INVERTER FED IPMSM DRIV

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ABSTRACT

This paper aims to study about three Direct Torque Control (DTC) techniques for an Interior Permanent Magnet Synchronous Machine (IPMSM) using Model Reference Adaptive Control (MRAC). In the conventional DTC technique using a look-up table, gate signals are given to the Inverter that drives IPMSM. Since it is a 6-sector scheme and the operation of the minimum number of voltage vectors, undesired torque and flux ripples are created. Hence the problem of ripples is reduced by using the DTC-12sector technique, where the stator flux locus is divided into 12 each of 30 degrees. Another technique of DTC is the Direct Torque Controlled (DTC)-SVM (Space Vector Modulation) technique. In the DTC-SVM technique by using Space vector pulse width Modulation, an Inverter is operated that drives IPMSM. Maximum Torque Per Ampere (MTPA) control is developed for the utilization of maximum drive efficiency. In addition, the sensorless control technique is implemented to improve the mechanical robustness of the drive and its cost-effectiveness. The sensorless technique that is used for the estimation of speed and rotor position is MRAC. By using MATLAB/Simulink the above schemes are simulated.

A STUDY OF A NON-ISOLATED DC-DC CONVERTER BASED ON HIGH VOLTAGE GAIN

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ABSTRACT

This article implements a best non-isolated DC-DC Converter for solar photovoltaic system-driven DC MicroGrid applications through high voltage gain methodology. At first, a hybrid boosting converter with bipolar voltage multiplier method is proposed and studied for photovoltaic-based DC MicroGrids. But the cost and functionality of this converter are a big problem. To eradicate these problemswith a proposed modified SEPIC converter and this converter is studied for producing high voltage gain. Formerly performance of hybrid boosting converter and modified SEPIC converter are simulated in PSIM software. As a final point, the simulation results are compared and verified that the modified SEPIC converter suits best for solar photovoltaic system-based DC MicroGrids in order to provideessential power levels to the residential electrical loads.

RAILWAY TRACK CRACK DETECTION USING GSM AND GPS MODULES

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ABSTRACT

Indian Railroads is one of the largest railroad systems in the World. There is an enormous development in the Indian railroads, indicating significant progress and growth in the Indian railway system, but some of the accidents occur due to cracks on the railway track. Due to seasonal changes, the track is expanded or contracted due to which splits may happen. To reduce the problems caused due to cracks on the railway track, a crack monitoring vehicle is proposed in this paper that uses an ultrasonic sensor to detect the crack and sends a SMS to the testing station via GSM and GPS module with the help of Arduino Uno. This intelligent system works like a remote monitoring system which gives an alert to stop the passage of trains in that particular path. The proposed model involves the use of Arduino, ultrasonic sensor, buzzer, GSM module, and GPS module.

POWER FACTOR IMPROVEMENT OF BOOST PFC CONVERTER FOR STREET LIGHT APPLICATION

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ABSTRACT

The LED street lights powered by AC power sources are a non-linear load. As a consequence of the non-linearity, LEDs powered by AC power sources are likely to have a lower power factor, and also have a greater total harmonic distortion. In this paper, Power Factor Correction using Boost Converter is presented for LED street light application. The feasibility of the Power Factor Correction (PFC) is verified using MATLAB simulations.

OPTIMAL POWER FLOW PATH USING DIJKSTRA'S ALGORITHM TO REDUCE TRANSMISSION LINE LENGTH

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ABSTRACT

In this paper deals with optimal power flow path using Dijkstra's Algorithm to reduce Transmission length, the Dijkstra's algorithm technique is one of the best methods for computing it is used to minimize the length of a transmission line. To determine the shortest distances between two nodes (source and load) for effective power transmission, MATLAB and its application aspect are used. The shortest transmission length has been identified and optimized in this paper. The path between the intended node and the node's coordinates are considered. If so, the separation between them. This paper comprises the cost factor, the material factor, the real-time estimation of Hyderabad's 14 substations, and the cost factor and material factor for the 14 bus system. The outcomes of the MATLAB simulation are obtained, and they are contrasted with values from real time.

DESIGN OF DECENTRALISED PI CONTROLLER BASED ON CHARACTERISTIC RATIO ASSIGNMENT METHOD FOR A WASTE WATER TREATMENT PLANT

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ABSTRACT

In this paper, a decentralized PI controller design based on Characteristic Ratio Assignment (CRA) method for a wastewater treatment plant (WWTP) is proposed. A decoupler is developed to reduce interactions and the First Order Plus Dead Time (FOPDT) model is obtained for each decoupled subsystem. The independent controllers are computed for each reduced order FOPDT decoupled subsystem using CRA method. This paper presents the design of a decentralized proportional–integral (PI) controller for a wastewater treatment plant (WWTP) and it is found that the controller is designed based on minimizing settling time and also to attain desired robustness characteristics. To verify the performance and stability of WWTP, simulations are performed in the MATLAB environment using the designed controllers.

EVOLVING IOT- BASED SMART HEALTHCARE MONITORING SYSTEMS

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ABSTRACT

The continuous progress in technology has led to remarkable enhancements in various aspects of human life, including healthcare. Within the healthcare sector, practitioners and experts are embracing new technologies to significantly improve the implementation of medical services. The Internet of Things (IoT) has emerged as a crucial foundation for various innovative healthcare technologies, such as heartbeat sensors, ECGs, and blood pressure sensors, each equipped with microcontrollers to read and interpret data from the sensors as needed. While these advancements have brought many benefits, the cost of healthcare services has also increased, making them less accessible to some individuals. Additionally, understanding the working of advanced healthcare system can be challenging for many people, leading to increased reliance on medical practitioners for interpretation. To address these challenges, in this paper a remote healthcare monitoring system is developed and designed to deduce patients' vital signs using sensors and provide easily accessible data to the public. Main objective of this work was to create a simplified mechanism that enables patients' families to continuously monitor their health status. The healthcare monitoring system operates by collecting data through sensors and transmitting it to the cloud. The collected data is then processed and analyzed for remote viewing. The analyzed information is shared with guardians, doctors, and family members, facilitating easy access to vital health data and promoting better healthcare management. For this process a prototype model is developed and validated the results.

MAXIMUM POWER POINT TRACKING BASED MODEL PREDICTIVE CURRENT CONTROL TECHNIQUE OF GRID CONNECTED VOLTAGE SOURCE INVERTER FOR PHOTOVOLTAIC SYSTEM

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ABSTRACT

As the demand increases for grid connected photovoltaic systems, there is a need to track the maximum power point of the given PV system, irrespective of the utility demand. Since the output of PV system is D.C, there should be a converter which is acting as medium between PV system and D.C link capacitor to track maximum power at all the loads. Usually boost converter will be acting as medium between PV system and dc link capacitor as the firing angle of IGBT in boost converter is in between 0 to 1 for maximum loads during MPPT. For smooth operation of the inverter, the dc link capacitor voltage should be maintained constant irrespective of the utility on the grid. For this purpose, the active current reference signal is to be generated by setting up the reference voltage across dc link capacitor and as the reactive current is to be supplied by the grid, the reference reactive current is to be maintained at zero. Here to generate active reference current PI controller is used. And the reference voltage is taken according to the peak voltage of the inverter output voltage. The proposed control strategy was evaluated on a three-phase inverter linked to the grid and supplied by the PV system, which is working under varying irradiation and cloudy conditions

A REVIEW OF DYNAMIC WIRELESS CHARGING SYSTEM FOR ELECTRIC VEHICLES AND IOT TECHNOLOGY

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ABSTRACT

Dynamic charging of Electric Vehicles (EVs) by Wireless Power Transfer (WPT) is a key emerging technology in the field of power electronics. Even though Electric vehicles (EVs) are beneficial to the environment, they have their own limitations with respect to charging difficulties and mileage anxiety. These problems are overcome by dynamic wireless power transfer (DWPT) technology. By DWPT technology the size of the main storage battery can be reduced, significantly reducing cost and weight. In a typical dynamic charging system coils embedded in the roadway, referred to as primary pads, are energized sequentially as a vehicle mounted coil moves over them. Magnetic coupling between the coils allows power to be transferred to the EV. This paper presents an IOT technology, cyber-attacks and security.

27 LEVEL HIGH FREQUENCY TRANSFORMER BASED-MLI FOR INTEGRATION OF RENEWABLE ENERGY

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ABSTRACT

This research proposes a unique highfrequency transformer (HFT)-based multilevel inverter(MLI) with 27 levels can be constructed with a single DC power supply and twenty switching devices. The proposed MLI topology comprises three medium frequency isolation transformers, each with a different rated voltage. Since the transformers used in MLI operate at high frequencies, the suggested system has a smaller volume and weight. A cascaded H-bridge (CHB) connects each transformer's primary windings, and the secondary windings are connected in series with the load. To find the nearest level,the HFT-based MLI uses a basic reasoning switching mechanism known as nearest level control (NLC). The proposed HFT-based multilevel inverter's performance was modeled and simulated using the MATLAB/Simulink environment.

REGULATION OF BOOST CONVERTER USING DOUBLE INTEGRAL SLIDING MODE CONTROLLER WITH CPL

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ABSTRACT

This paper represents a robust nonlinear control strategy to solve instability problem of dc-dc boost power converter with constant power load by using double integral sliding mode control (DISMC) method. DISM is an indirect type of sliding mode control strategy and overcome the problems due to CPL. DISM provides better tracking performance of voltage and also eliminate voltage steady state error. This strategy ensures large signal stability as well as fast recovery performance as compared to other control methods. To show the effectiveness of the DISM in overcoming instability issues of the CPL in boost converter a 24 to 48 V converter is designed and MATLAB simulation performed.

DOUBLE-INTEGRAL TYPE OF INDIRECT SLIDING MODE CONTROLLER FOR POWER BUCK CONVERTERS FED WITH CONSTANT POWER LOADS

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ABSTRACT

This article signifies the robust nonlinear technique to solve instability issues of dc-dc buck power converter connected with constant power load. when power electronic converter operates under tightly regulated condition will have constant power behaviour at its input terminals. This CPL will exhibit NII behaviour; it is the main root cause of instability problems in the system. These instabilities can be eliminated by using nonlinear controller of SMC. The Performance of a sliding mode controller (SMC) is mainly inclined by the choice of the sliding surface. SMC provides robust control actions in aspect of system uncertainties and eliminations steady-state error. For this, it uses integral SMC for tracking of voltage error term in its sliding surface. But it is ineffective to mitigate the steady state voltage errors, this can be overcome by the double integral SMC, i.e an additional double integral term of controlled variable to be adopted for designing the sliding surface of the indirect sliding mode controller. To check the effectiveness of DISMC, in the view of instability issues of CPL in buck converter system, were taken 24-12V, wattage, and verified in MAT Lab/Simulink environment.

ECONOMIC LOAD DISPATCH USING GAMS FOR 20 BUS RAPID TRANSIT VEHICULAR SYSTEM

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ABSTRACT

This paper investigates a 20 bus system smart grid for economic load dispatch using GAMS software which is used for future rapid transit vehicles. The analysis with GAMS yielded interesting results in the shortest possible time and is very useful for complicated power system load balancing problem analysis.

REVIEW OF V2G AND G2V TECHNOLOGY IN MICROGRID USING BIDIRECTIONAL DC-DC CONVERTER

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ABSTRACT

Modern power systems must have bidirectional DC-DC converters . these converters are being used more frequently in a wide range of applications where both forward and reverse power flow are necessary. These include but are not limited to electric vehicles, renewable energy systems, electric vehicle charging stations and energy storage systems. This paper aims classification dc to dc converters , charging stations architectures and control strategies in microgrid , bidirectional charger to operate in both grid to vehicle (G2V) and vehicle to grid (V2G) modes. Vehicle to grid technology has gained a lot of attention as an increasing number of electric automobiles enter the market. The plug-in electric vehicles, provide the ability to integrate unconventional energy sources and can serve as a source of power or as a specific electric load. They can also be used as storage devices.V2G technology can be implemented in the micro-grid to avoid some of the difficulties that would arise when it is implemented in the power grid.

MODEL PREDICTIVE CONTROL OF VARIABLE SPEED VARIABLE PITCH WIND ENERGY CONVERSION

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ABSTRACT

Multiple-input multiple-output model predictive control technique for variable-speed variable-pitch wind turbine in the below-rated wind speed zone is proposed. The speed of the generator and power generated are regulated simultaneously by controlling the pitch angle of wind turbine and the generator torque. This has the effect of extracting the maximum power from the wind for wind speeds below the rated value. Also, as the constraints are incorporated on the physical variables of wind energy conversion system(WECS), the system operates within safe operating limits. The performance of the proposed control strategy validated against the performance of the proportional-integral (PI) controller.

MODELING AND CONTROL OF VARIOUS DRIVE TRAIN MODELS OF DFIG WIND TURBINE

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ABSTRACT

The wind energy system (WES) has been gaining popularity in recent years for the reason of its resourcefulness and intrinsic reproducibility. Power quality and transient stability are major issues of WES under the influence of fluctuating wind speeds and network outages. The study focuses primarily on the various drive train models for the DFIG wind turbine, as well as torsional oscillations produced by fluctuations in wind speed. The pitch-damping control is implemented to decrease the torsional oscillations and hence lowering system damage.

SLIDING MODE CONTROL OF DOUBLY FED INDUCTION GENERATOR

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ABSTRACT

Nowadays, WECS plays an important role in generating electrical energy. The most widely used wind turbines are variable-speed wind turbines (DFIG). However, these machines are sensitive to voltage disturbances because of their stator are directly connected to the grid. The oscillations produced in electromagnetic torque, active and reactive power during disturbances could damage the mechanical and electrical parts of the machine. Several control techniques are produced to control these parameters. This paper presents the PI control technique and sliding mode control technique. The PI controller gives a slow response. Whereas for non-linear systems, SMC is an amazing technique as it responds to both parametric and non-parametric oscillations. The system is modeled and simulated using MATLAB.

STUDY OF MULTIPLE-INPUT MULTIPLE-OUTPUT DC-DC CONVERTER FOR DC MICROGRID APPLICATIONS

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ABSTRACT

The integration of renewable energy sources and the growing demand for sustainable energy solutions have led to the development of DC microgrids. DC microgrids offer numerous advantages such as increased efficiency, reduced transmission losses, and enhanced reliability. However, the varying output characteristics of renewable sources and the dynamic nature of loads within a microgrid necessitate efficient power management systems. MIMO (Multiple-Input Multiple-Output) DC-DC converters have emerged as a promising solution to address these challenges. This paper presents a comprehensive review of the state-of-the-art MIMO DC-DC converters for DC microgrid applications. Various topologies, control strategies, and performance evaluation methods are discussed, providing insights into the current research landscape and future directions.

REDUCED SWITCH SEVEN-LEVEL MULTILEVEL INVERTER FOR RENEWABLE ENERGY APPLICATIONS

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ABSTRACT

The world is currently dealing with two major issues. The first issue is a shortage of fossil fuels in the near future, and the second is increased atmospheric pollution, which leads to an increase in ambient temperature (global warming), which necessitates the need to switch from traditional energy sources to renewable energy sources (RES). As the power generation from renewable energy sources is increasing gradually, the importance of multilevel inverters is also rising day by day for the grid integration of power generated from renewable energy sources. In this paper, a single-phase multilevel inverter is designed for the application of renewable energy sources like Photovoltaic and Fuel cells, etc. The chosen multilevel inverter configuration for the study requires a lower switch count to generate multilevel output. The sinusoidal pulse width modulation technique is employed for generating control pulses for the multilevel inverter. The performance of the model is analyzed by simulation in MATLAB software.

VARIOUS NAVIGATION AND CONTROL SYSTEM DESIGN ASPECTS FOR MOBILE ROBOTS

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ABSTRACT

An appropriate control systems design for robots is essential for their safe operation. Many researchers have explored various control systems, including linear, nonlinear, adaptive, robust, and optimal controllers, etc. for various robotic operations. In recent era, many of the under-graduate and post-graduate degrees have had courses on robotic control. In the last decades, many of universities have included educational robots in their curriculum covering the kinematics, dynamics, control, guidance, and navigational aspects. This paper reviews the various navigation and control systems designed for Quanser robots for the last decade. It is to be noted that many of these controller design aspects assume that the sensors and actuator are fault-free and the nominal control could able to provide the design specification. In this paper, after the thorough review, it will be argued that though some controllers have some inherent capabilities to deal with fault – but are not sufficient for real-life applications; hence there is still enough scope for extensive research in the area of fault-tolerant controllers for mobile robots.

ELECTRIC VEHICLE TECHNOLOGIES: A REVIEW

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ABSTRACT

Conventional vehicles cause the emission of harmful gases into environment which causes environmental issues to add to that, conventional fuels are exhausted day to day which leads to looking at alternative energy sources in the transportation sector. Electric Vehicles (EVs) are one of the best solutions having advantage of less environmental pollution and availability of rich non-conventional electrical energy (Renewable energy) sources. This paper reviews EV Technologies like the latest trends in battery and battery management systems (BMS), Battery charging methods, power trains, and different topologies used in electric vehicles to achieve low-cost, highly efficient, sustainable, and more reliable transportation.

P AND O MAXIMUM POWER POINT TRACKING TECHNIQUE WITH PID CONTROLLER FOR A WIND POWER SYSTEM

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ABSTRACT

The efficiency of the wind power generation is improved by proposing a PID (Proportional Integral Derivative) controller based MPPT (Maximum Power Point Tracking) scheme in the LabVIEW platform. The wind turbine is modelled in accordance to the mathematical equations in LabVIEW platform. The permanent magnet synchronous generator(PMSG) and rectifierconverter system are modelled in the LabVIEW Multisim platform. The Perturb and Observe MPPT control strategy with a PID controller is introduced to the system to obtain maximum power. The simulation tests are performed under various wind speeds. The results obtained demonstrate that PID based MPPT technique is efficient to improve wind power generation.

DESIGN AND IMPLEMENTATION OF AGRICULTURAL SPRAYING DRONE

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ABSTRACT

In this brief an attempt has been made to develop an agricultural drone to spray pesticides in an agricultural farm. In India, agriculture is one of the key economic sectors. Crop production rates are influenced by factors such as temperature, moisture content, rainfall, etc. The field of husbandry is also influenced by other elements, such as pests, complaints, diseases, etc., which can be managed by giving crops the right care. Fungicides may increase crop production, but they may also have an effect on people's health. Now-a-days to reduce the burden on the growers, remote controlled drones should be used to spot fungicides and germicides. This design deals with design and development of a drone to spray fungicides and germicides to kill the pests and insects to boost the crop of crop in our land. In this work, we developed the hexa-copter agricultural drone sprayer. Pesticides up to 0.5 liters in volume can be carried by the drone. A pesticide spraying tool is part of the drone, and the ground control station uses a remote control to operate it. Pesticides can be released from the spraying equipment a t a rate of 0.0166 liters per second. The drone can fly for about 8 minutes. The planned drone will lessen the amount of labor needed and the amount of time needed to spray pesticides as well as the health risks to the farmers.

A NOVEL HONEY BADGER OPTIMIZATION MPPT CONTROL FOR A HIGH GAIN NON-ISOLATED DC–DC CONVERTER FOR PV APPLICATIONS

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ABSTRACT

The Pulse-width modulation (PWM), a technique used by DC-DC power converters, is currently a hot topic in a variety of applications, including those utilising renewable energy sources. Thus, A novel, The development of a very effective non-isolated converter. in order to extract the maximum PV system power. In varying weather conditions, maximum power is used to control PV system loading. The maximum power of a PV system is controlled using a fractional order proportional-integral-derivative (FOPID). However, the MPPT is less efficient as partial shading increases. The Honey Badger Optimization (HBO) algorithm is introduced to improve the efficiency and convergence of MMPT. The inspiration for this HBO model is the superior foraging behaviour of honey badgers. This HBO model is utilized to provide the optimal solution for GMPP tracking and speed convergence. The proposed converter has several benefits, including high output and gain voltages. This proposed converter operates in two modes. The converter and controller proposed are used to extract the most power. The proposed system is created with the aid of MATLAB/Simulink, and its performance is measured using PV and converter parameter metrics. The proposed approach is examined under two operating situations, namely, constant and variable irradiance. The Flower Pollination Algorithm (FPA), Gravitational Search Algorithm (GSA), and Particle Swarm Optimization (PSO), respectively, are used to compare the new method to the conventional methods.

DESIGN AND FABRICATION OF AUTOMATIC INDUSTRIAL HAZARDOUS AND WASTE COLLECTING MACHINE

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ABSTRACT

Automatic Industrial Hazardous And Waste Collecting Machine Was Cleaning overcomes all sorts of drainage problems and promotes blockage free drains promoting continuous flow of drain water. In the modern era there have been adequate sewage problems where sewage water needs to be segregated to clean our surrounding environment. The waste and gases produced from the industries as well as surrounding ares of cities are very harmful to human beings and to the environment. Our proposed system is used to clean and control the industrial level using auto mechanism technique. The bedrock of the project is an endeavor to put back manual disposal of waste in sewage treatment plants and other industries. This will be an attempt to put weight off the shoulders of the manual workers involved in solid waste removal. The declining trend of deaths will be evident by replacing humans with these machines in clearing the solid waste of industries. Technological innovation for empowering the social dignity of the manual labor in sewage plants is inherent in this innovation. This will be a valid step put forth to boost one of the goals of sustainable development- A life of diginity for all ,This paper presented is an agglomeration of socio economic development, scientific temper and innovation which is stepping towards sustainable development

REDUCTION OF TOTAL HARMONIC DISTORTION USING SHUNT ACTIVE POWER FILTER CONTROL

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ABSTRACT

This paper work presents a single-phase shunt active power filter to reduce total harmonic distortion. Due to wide use of nonlinear single phase power electronic devices in low voltage side has increased harmonic pollution in the power system to the larger extent. Improving power quality has become the biggest challenge for electrical engineers. A single-phase shunt active power filter was modeled in MATLAB/SIMULINK using hysteresis current controller and voltage source inverter. Simulation results are presented to demonstrate performance of single-phase shunt active power filter during presence of nonlinear load.

SLIDING MODE CONTROL OF SOLID WORKS DESIGNED ROBOTIC MANIPULATOR CO-SIMULATED IN MATLAB

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ABSTRACT

This paper proposes Sliding mode control (SMC) algorithm for controlling of three degrees of freedom(3DOF) robotic arm. This concept was inspired by seeing the increasing of potential applications of robotic arm in automation industry mainly the applications like pick and place. The 3DOF robotic arm is designed in the SolidWorks and then it is imported to MATLAB for simulation purpose. Initially simulations are done by using the conventional PID controller but the permeance is not up to the mark the end effector taking more time to track the reference trajectory. So, to improve the results the proposed Sliding mode controller is designed and to increase the smoothness in the end effector moment the sliding surface is constructed by using proportional and derivative constants. A detailed derivation of this proposed SMC controller is provided in this paper. For each x, y and z axis three different trajectory paths are generated. The obtained trajectory tracking error by using this SMC controller is compared with the PID controller according to obtained results conclusion is that this proposed controller gives good and accurate output. The complete simulations are done in MATLAB.

SOLAR POWERED IRRIGATION SYSTEM DESIGN WITH VENTURIMETER FOR UTILIZING NATURAL RESOURCES

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ABSTRACT

This research focuses on enhancing crop productivity in agriculture by ensuring high quality and quantity of crops. To achieve this, it is crucial to provide crops with rich nutrients in a timely and efficient manner. Thus, liquid-based fertilizers are selected for this purpose. However, farmers often face challenges in supplying fertilizers with the required quantity and precision. To address this issue, we propose a solution that leverages solar energy to power a submersible pump, enabling the supply of stored rainwater and liquid fertilizer to each plant. To ensure a uniform rate of flow for both the liquid fertilizer and water, we design a venturimeter throat diameter optimized for strawberry plantations. This approach aims to minimize effort and optimize the utilization of natural resources such as rainwater and solar energy for sustainable and effective agriculture practices.

SOC ESTIMATION FOR BATTERY MANAGEMENT SYSTEMS USING LI-ION BATTERIES IN ELECTRIC VEHICLES

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ABSTRACT

Since the battery system controls the occupants' safety, functioning, and even life, the majority of electric vehicles (EVs) require battery monitoring. This is precisely what Battery-management system is: to monitor and regulate the condition of the battery among the parameters set for safe operation. For safe and dependable operation, electric vehicles (EVs) are in need of high rated capacity batteries and appropriate battery management systems (BMS). Consumer adoption of high energy density battery materials in critical applications will be impossible without considerable advancements in BMS algorithms. As a result, the goal of this research is to provide a detailed study focused at improving one of the most significant jobs done by a contemporary BMS, namely the monitoring and estimation of various battery states among which considering the state-of-charge (SOC) estimation.

STUDY AND REVIEW OF HIGH GAIN DC-DC CONVERTERS FOR RENEWABLE POWER APPLICATIONS

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ABSTRACT

In this paper, a comprehensive study of nonisolated High gain DC-DC Converters suitable for renewable power applications are presented. These converters are suitable for renewable power, DC micro grids and electric vehicle applications. Renewable systems like solar PV systems generate low magnitudes of DC voltage and hence design different topologies of High gain DC-DC converters are considered to be an important area of the research these days. In this paper, study and review of these converters are made to select a converter for different practical applications.

POWER PLANT MODEL VALIDATION FOR IMPROVING SYSTEM RELIABILITY AND SECURITY

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ABSTRACT

Model that represents virtually all practical systems. Power system models are used to demonstrate the system performance studies such as generation, load growth estimation, operating limits calculation and (SIPS) system integrity protective schemes performance computations and all this study depends upon an exact mathematical model representation of the trans- mission system, generation system and load model. Comparison of performance data of the power system model with the actual system measured data called power system model validation. These Model are needed to validate regularly but practically this does not happen. So that the studies derived from these models are not accurate if any model does not show a reasonable observed phenomenon on the power system. Present work is to investigate the importance of power plant model validation and to examine the state of model validation implementation and to propose the improvements. Model validation is a crucial process for maintain system reliability and system security.

LOAD FREQUENCY CONTROL FOR A TWO-AREA INTERCONNECTED POWER SYSTEM BY USING SLIDING MODE CONTROLLER

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ABSTRACT

This paper presents the usage of sliding mode Control algorithm for the load frequency control in power systems. A sliding mode based load frequency controller is applied to a two-area power system. Non-reheat and reheat Thermal turbines are distributed in these two areas respectively. The nonlinearities such as governor dead band and generation rate constraint are included in the block diagram of a power plant model. Our control goal is to regulate the load frequency error of the power system in the presences of different load changes and parameter variations. The sliding mode controller (SMC) is simulated on the two-area interconnected power system with nonlinearities. These simulation results shows the robustness of the sliding mode controller. And it also shows that frequency error and tie line power errors are converges to zero. The performance of sliding mode controller is compared with conventional PI controller, PID and fuzzy controllers. This comparisons show that SMC is the most effective and insensitive to the parameter variations tan the other controllers. This procedure is to outlook as top-down proceed towards verification and comparisons with data measured indicates the quality of overall model and investigation of the dissimilarity between measured data and simulation data demonstrate which component in subsystem models are need to be revalidate.

WIND-SOLAR COGENERATION ON THE GRID USING VOLTAGE-SOURCE CONVERTERS

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ABSTRACT

The paper presents a cost-effective configuration for a Grid-Connected Wind-Photovoltaic Cogeneration system. In addition the topology provides an independent tracking of the maximum power point for both wind and solar to maximize renewable energy use. The solar is correlated with grid via Voltage Source Inverter (VSI), wind turbine based on a permanent magnet synchronous generator is correlated with the utility grid via Voltage Source Rectifier (VSR). The intermediate circuit capacitor was used for the direct connection of photovoltaic solar generator, DC/DC conversion is not required and therefore the hybrid system is simple and efficient. The detailed small-scale models for the system modules are developed to illustrate the overall stability. The impact of disturbances in the supply network on the performance of the system is examined. The simulation results under different operating conditions are presented to validate the stability of the proposed topology by using MATLAB/Simulink.

ANALYSIS OF CASSON NANOFLUID FLOW OVER A NON-LINEAR INCLINED SURFACE WITH SORET AND DUFOUR EFFECTS BY HOMOTOPY

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ABSTRACT

The consequences of a boundary layer flow with a Casson nanofluid over an inclined extending surface with Soret and Dufour are examined in this paper. In addition, thermal radiation, chemical reaction, Brownian motion and thermophoresis properties are considered when analysing heat and mass exchange phenomena. Through the use of the proper transformations, the dimensionless problem is obtained. The problem's controlling PDEs were converted to ODEs, and then they were resolved using the homotopy analysis method (HAM). By using a homotopic analysis technique, convergent series solutions are obtained. Graphs that show how influential variables affect physical quantities are depicted. It has been found that accelerating inclination parameter declines the skin friction but has the reverse effect on the Nusselt numbers and the Sherwood number. The inclination parameter shows a declination in velocity, whereas the chemical reaction rate parameter shows an opposite trend in the concentration field. We compared our results to previously published research to assess their validity and discovered a large degree of concordance.

MATHEMATICAL MODEL FOR WILLIAMSON FLUID IN PRESENCE OF CHEMICAL REACTION TOWARDS AN PARABOLIC SURFACE

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ABSTRACT

The proposed work is significantly important due to its applications in manufacturing process of submarine, bullets and aircrafts, and many more engineering and industrial works such as cooling and heating processes and chemical works. The purpose of this article is to scrutinize the flow, heat and mass transferal for the boundary layer flow of non-Newtonian fluid with chemical reaction on the radiative paraboloid surface. The non-Newtonian fluid which is under consideration is Williamson fluid model which is generalized Newtonian fluid. For the sake of heat and mass transport, we have considered the joule heating and viscous dissipation effects. The governing equations of considered fluid model occurred in the PDEs form and then transmuted into ODEs form by using similarity variables. The graphical behavior in terms of velocity field is noted due to magnetic parameter, thickness parameter and Weissenberg number which show drop behavior in velocity profile. The impact of thermal radiation and Eckert number is noted here and concluded that both quantities creates enhancement in temperature field. The concentration transfer rate is observing for chemical reaction parameter which diminishes the concentration. Also the comparison analyses with published articles are presented.

DYNAMICS OF PREY- PREDATOR MODEL WITH HOLLING TYPE-II FUNCTIONAL RESPONSE

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ABSTRACT

In this paper we investigate the prey-predator model with holling type II functional response of type $\frac{1}{1+kN_i}$. in prey-predator interaction. The system is described by a system of ordinary differential equations. The boundedness properties, long term behaviour of the system, equilibrium points are identified. Local stability analysis is discussed at each of its equilibrium points. Global stability is studied by constructing suitable Lyapunov's function. We proved that the system is both locally and globally asymptotically stable. Further Numerical simulation is performed and in support of analytical study.

ON A CLASS OF LORENTZIAN PARA-KENMOTSU MANIFOLDS ADMITTING QUARTER-SYMMETRIC METRIC CONNECTION

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ABSTRACT

In this present paper, a class of Lorentzian almost paracontact metric manifolds known as the LP-Kenmotsu (Lorentzian para-Kenmotsu) is considered that accepts a connection of quarter-symmetric. In this work it was found that an LP-Kenmotsu manifold is symmetric with respect to quarter-symmetric metric connection if and only if it is symmetric with respect to the Riemannian connection, provided the scalar curvature of Riemannian connection is constant.

NUMERICAL STUDY OF INSPIRATORY AND EXPIRATORY FLOW IN A HUMAN NASAL CAVITY – REVIEW

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ABSTRACT

The complicated architecture associated with the nasal anatomy makes it difficult for visualization and measurement of flow parameters inside the nasal cavity. Objective measurement devices like rhinomanometry or acoustic rhinometry fail to assist the understanding of the physiology at every location within the nasal cavity. Therefore, in order to visualize the flow features inside the nasal cavity and to compare the inspiratory phase and expiratory phase in terms of parameters like velocity, resistance, wall shear stress, vortex formation and turbulence intensity, a computational fluid dynamics study was carried out. This study presents, the usefulness of a technique based on functional imaging and computational fluid dynamics (CFD) modeling in generating useful data that can be used to determine and diagnose upper-airway conditions. Variations in flow patterns and flow features such as pressure drop, velocity and the left and right cavity were observed. Resistance to flow was greater during inspiratory phase when compared to the expiratory phase. Turbulence intensity was more predominant during expiratory phase, whereas vortex formation could be observed only during the inspiration mechanism.

TRANSIENT ANALYSIS OF M/M/1 FRACTIONAL QUEUE

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ABSTRACT

In queuing models, sometimes the server may not work with full efficiency or may stop working also. Such queuing models can be analysed with the help of fractional differential equations. To design the problems involving partial activity of the server, differential-difference equations involving fractional derivatives in the sense of Mittag-Leffler function have been employed. In this paper, an alternative approach has been proposed to obtain transient solution of fractional M/M/1 queue in matrix form. The results obtained by this new approach are justified by comparing them with solutions of classical queue which are available in the literature. Efficacy of the model can be assessed by computing its state probabilities and also measures such as expected number of customers in the system etc., Also, the variations in these measures with respect to partial activity of the server has been presented graphically and numerically. Further, a mathematical procedure to find optimal efficiency of the server has been discussed.

STABILITY ANALYSIS OF PREY HARVESTING IN PREY- PREDATOR MODEL

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ABSTRACT

In this paper we investigate the dynamics of prey-predator model of holling type II response function with harvesting of prey species. The constant effort harvesting is taken for investigation. The system is described by a system of ordinary differential equations. The boundedness properties, long term behaviour of the system is discussed. The possible equilibrium points are identified. Local stability analysis is discussed at each of its equilibrium points. Global stability is studied by constructing suitable Lyapunov's function. We proved that the system is both locally and globally asymptotically stable. Further Numerical simulation is performed and in support of analytical study.

STABILITY ANALYSIS OF PREY-PREDATOR MODEL WITH PREY HARVESTING

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ABSTRACT

In this work, we investigate the stability behaviour of prey-predator model of holling type II response function with prey population is subjected to linear effort harvesting. The system is described by a system of ordinary differential equations. We explore the boundedness properties, long term behaviour of and permeance of the system. The possible equilibrium points are identified. Local stability analysis is discussed at each of its equilibrium points. Global stability is studied by constructing suitable Lyapunov's function. We show that the system is both locally and globally asymptotically stable. Further Numerical simulation is performed and in support of analytical study.

ON ϕ -CONFORMALLY FLAT LORENTZIAN PARA-KENMOTSU MANIFOLDS

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ABSTRACT

In this present paper, we consider a class of Lorentzian almost paracontact metric manifolds namely Lorentzian para-Kenmotsu (briefly LP-Kenmotsu) manifolds. We study and have shown that Lorentzian para-Kenmotsu manifolds which are conformally symmetric and conformally flat are locally isomorphic to a unit sphere S(1). Further it is shown that ϕ –conformally flat LP-Kenmotsu manifold is an η -Einstein manifold.

CONTROLLABILITY, OBSERVABILITY AND STABILITY OF NON-LINEAR VOLTERRA LYAPUNOV TYPE INTEGRO-DIFFERENTIAL EQUATIONS ON TIME SCALES

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ABSTRACT

In this article, we establish the general solution of non-linear Lyapunov type matrix Volterra integro-differential system on time scales. Controllability, observability and stability of the system is also discussed.

ON φ -CONHARMONICALLY FLAT LORENTZIAN PARA-KENMOTSU MANIFOLDS

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ABSTRACT

The present paper deals with a class of Lorentzian almost paracontact metric manifolds namely Lorentzian para-Kenmotsu (briefly LP-Kenmotsu) manifolds. We study and have shown that the Quasi-conformally flat Lorentzian para-Kenmotsu manifold is locally isomorphic with a unit sphere $S^n(1)$. Further it is shown that an LP-Kenmotsu manifold which is φ-conharmonically flat is η -Einstein manifold with the zero scalar curvature. At the end, we have shown that a projectively flat LP-Kenmotsu manifold is an Einstein manifold with the scalar curvature $r = n(n-1)$.

PHOTOLUMINESCENCE PROPERTIES OF $Tm^{3+}/Ho^{3+}/Cr^{3+}$ - CO-DOPED $Y_3AlGa_4O_{12}$ NANO-GARNET PHOSPHORS FOR VISIBLE-NIR LED APPLICATIONS

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ABSTRACT

Trivalent lanthanide (Ln^{3+}; Ln = Tm, Ho, Cr)-doped $Y_3AlGa_4O_{12}$ nano-garnet phosphor powders with varying Cr^{3+} ion concentration (0.5, 1.0, 2.0 and 3.0 mol%) were prepared using sol-gel synthesis. The prepared powders were characterized by X- ray powder diffraction (XRD), Raman spectroscopic and photoluminescence spectroscopic techniques. Phase purity, structure and crystallite size have been estimated from the XRD results. Raman spectra showed the vibrational analysis of the prepared powders. Excitation spectrum showed a broad band at 354 nm when monitored at 712 nm. Under 360 nm excitation, emission spectra showed a broad band with characteristic peaks of Tm^{3+}, Ho^{3+} and Cr^{3+} ions. The intensity of peaks and full width at half maximum were increased up to 2.0 mol% Cr^{3+} ion and then decreased. All the decay curves exhibited non-exponential nature with an average lifetime of 0.302 ms. The decay curves were found to be insensitive to the Cr^{3+} ion concentration. The CIE colour co-ordinates were located in the orange region of the CIE diagram with correlated colour temperature 2261 K. The results showed that the present phosphors were suitable for the solid state light emitting diode applications.

ANTIMICROBIAL STUDIES ON TITANIUM DOPED MANGANESE-ZINC NANOPHASED FERRITES

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ABSTRACT

Hydrothermal synthesis of nanophased $Mn_{0.5}Zn_{0.5}Ti_{0.1}Fe_{1.87}O_4$ ferrite is carried out. Spinel structure of the ferrite is confirmed by X-ray diffraction studies and the crystallite size is estimated to be 56 nm. Agar disk diffusion testing method is used for antimicrobial susceptibility of titanium doped Mn-Zn ferrite nano particles. Antimicrobial efficacy of the present sample against gram positive and gram-negative bacterial is studied. A significant inhibition zone is observed in case of Staphylococcus-aureus, while for E-coli and Bacillus, the inhibition zone is found to be moderate. An abnormal activity is viewed with pseudomonas. The inhibition zone is found to decrease with increase of concentration of the sample. Improved antimicrobial properties observed in the present samples is attributed to relatively smaller size of the obtained nano powders and the capability of releasing Reacting Oxygen Species (ROS) such as H_2O_2 and super oxides due to the presence of Titanium, Zn, and Iron in the sample.

STABILITY CONSTANTS OF CITRIC ACID IN CTAB-WATER MEDIUM

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ABSTRACT

The influence of Cetyltrimethylammonium bromide (CTAB-Water) on the protonation equilibria of citric acid has been studied in various concentrations (0.0-2.5% w/v) of CTAB solution maintaining an ionic strength of 0.16 mol dm^{-3} at 270°C. The Stability constants have been calculated with the computer program MINIQUAD75 and the best fit models have been calculated based on statistical parameters. The trend of log values of step-wise Stability constants with di-electric constant of the medium has been explained based on electrostatic and non-electrostatic forces operating on the protonation equilibria. Mathematical models for acido-basic equiliria have also been presented.

A STUDY TO EVALUATE PSYCHOSOCIAL AND PHYSICAL EFFECTS OF PARTIAL SLEEP DEPRIVATION AMONG POST MENOPAUSAL WOMEN

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ABSTRACT

Sleep deprivation is common among post-menopausal women which show multiple effects on social, physical and psychological health. These effects are evident irrespective of whether they are working women or homemakers. This study evaluates and analyses the psychosocial and physical influence caused by sleep deprivation. An attempt is made for a prospective contextual, descriptive research design and study. A convenient sample of post-menopausal women was randomly approached via a questionnaire. Data was descriptively analyzed.

EXTRACTION AND ANALYSIS OF ACHYRANTHES ASPERA LINN OIL

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ABSTRACT

The present investigation aims on using achyranthes aspera linn (uttareni) oil as herbal oil and analyzing its physical and chemical properties. Achyranthes aspera linn oil is obtained by crushing leaves and extracting with suitable solvent. This processing method is safer when compared to commercial oil processing methods. The benefits of processing the leaves into oil are unknown to many. So, the research focuses to educate people about this alternative medicinal plant oil.

SYNTHESIS, CHARACTERIZATION AND BIO ACTIVITY STUDY OF NOVEL 2-(3-methoxy-9H carbazol-9-yl)-N-phenyl acetamide ANALOGUES

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ABSTRACT

We present the synthesis of novel 2-(3-methoxy-9H-carbazol-9-yl)-N-phenyl acetamide analogues and their spectroscopic characterization. The analogues were synthesized from 2-(3-methoxy-9H-carbzol-9-yl) acetyl chloride by substituting aromatic primary amines in the presence of organic base such as triethylamine and MDC under reflux. The structures of these novel compounds were determined by using 1H NMR, 13C NMR, LCMS techniques, and elemental analysis. The antimicrobial activity of newly synthesized compounds have been evaluated against bacterial and fungal strains.

STRUCTURAL AND MAGNETIC PROPERTIES OF Mn^{3+} SUBSTITUTED COBALT-NICKEL NANOFERRITES FOR MICROWAVE ABSORBING APPLICATIONS

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ABSTRACT

In this work, structural, magnetic and microwave absorption properties of Mn^{3+} substituted cobalt-nickel nanoferrites with composition $Co_{0.9}Ni_{0.1}Mn_xFe_{2-x}O_4$, (where x =0.0 and 0.05) synthesized using sol-gel combustion method were reported. X-ray diffraction analysis confirmed the formation of single-phase Mn^{3+}-substituted cobalt-nickel nanoferrites. Magnetic properties estimated using Vibrating Sample Magnetometer (VSM). Saturation magnetization was found to decrease with Mn substation. The EMI shielding behavior estimated using vector network analyzer (VNA) suggest that Mn^{3+} substituted cobalt-nickel nanoferrites exhibit good microwave absorption properties.

STUDY OF ELASTIC PROPERTIES OF COPPER SUBSTITUTED NICKEL – ZINC NANO FERRITES THROUGH IR-SPECTROSCOPY

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ABSTRACT

Nano crystalline $Ni_{0.65}Zn_{0.35}Cu_xFe_{(2-2x/3)}O_4$, (x ranging from 0 – 0.05 in steps of 0.01) ferrites synthesized via hydrothermal route are characterized by FTIR spectroscopy. IR spectra of prepared ferrites demonstrated the two fingerprint absorption bands of spinels in the range of 400-600 cm^{-1}. Lattice constant, X-ray density values obtained from XRD patterns used for evaluating the tetrahedral site and octahedral site force constants (F_t, F_o). Stiffness constants (C_{11}, C_{12}), elastic wave velocities i.e., longitudinal wave velocity (V_l), transverse wave velocity (V_t), and mean wave velocity (V_m) are evaluated and reported. Poisson's ratio (σ), Moduli of elasticity (Young's Modulus-E), Rigidity Modulus (G) and Bulk Modulus (K) are determined. Pauling's electronegativities almost remains constant indicating, no substantial deviation in the strength of the ionic bond with copper substitution. Debye temperature determined using Waldron formula and Anderson formula are observed increasing with copper addition. Our results provide a well considerate of compositional dependence of elastic behaviour of Ni-Zn nano ferrites and showing strong solid material nature suggested for their extensive applications.

OCCUPANCY OF Al^{3+}/Cr^{3+} IONS AT B-SITES IN Ni-Zn-Cu FERRITE SYSTEM SYNTHESIZED BY SOL-GEL AUTO-COMBUSTION METHOD

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ABSTRACT

Ferrites are widely used in conventional electronic, electrical and magnetic devices. The ferrite materials substituted with different cations have become most important because of their both fundamental and technological application. In the present work, we study the effect of Al^{3+} and Cr^{3+} on $Ni_{0.7}Zn_{0.2}Cu_{0.1}Fe_2O_4$ nano-ferrites synthesized through the sol-gel auto-combustion method. These synthesized nano-ferrites are characterized by XRD, SEM, FTIR, ESR, VSM and dielectric techniques. X-ray diffraction revealed the formation of cubic spinel structure with space group *Fd3m*. There is no impurity found in XRD spectrum. SEM showed the particles are in spherical shape with an average grain size 5-10 nm. FTIR spectra exposed the fundamental absorption bands related to octahedral and tetrahedral sites in the range 400-600 cm^{-1}. The g-factor decreased linearly with increasing magnetic field and dopant concentration. The addition of Al^{3+} and Cr^{3+} in place of Fe^{3+} will decrease the parallel spin in B-site when both substitute ions enter into B-site as well as increase A-B interaction favours the anti parallel spin arrangement between the A-site and B-site. The obtained results are good agreement with the reported values.

A STUDY ON FLIPPED LEARNING MODELS IN ENGINEERING PEDAGOGY

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ABSTRACT

The purpose of this article is to describe the current state of knowledge and practice in the flipped learning approach in engineering education. This paper discusses Pedagogical logistics of Flipped learning models in engineering while examining various teaching models used in colleges and universities all over India, especially NITS and IIITs. It has been the mission of the author to focus on the implementation of integration various study models in regular teaching practices.

CHAT GPT'S FUNCTIONS: HOW IT CONNECTS TO ENGLISH LANGUAGE AND LITERATURE

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ABSTRACT

An artificial intelligence chatbot named ChatGPT (Chat Generative Pre-Trained Transformer) was created by Open AI and released on November 30, 2022. It stands out for giving users the ability to shape and direct a conversation towards the preferred level of detail, structure, style, and language utilised. Although Chat GPT can create messages that resemble the original language, it cannot replace English as a language. After composing a few texts, you must rehearse speaking and writing the sentences in order to fully understand and master them. The interface, which simulates human-like interaction, is actually a language processing system. The Chat GPT interface gives users a unique and interesting experience when exploring, debating, and producing within the field of English literature by fusing the power of advanced language processing with the breadth of literary knowledge. It serves as a cutting-edge and versatile tool for both general readers and subject-matter specialists in the field of language and literature. The interface of Chat GPT and the English language and literature involves a dynamic interaction that allows users to communicate with the AI model using natural language with an emphasis on circumstances connected to English language and literature. The theme of the paper is the relationship between the Chat GPT and English language and literature. Additionally, the paper also discusses the critical role that chat GPT plays in the efficient application of creative assistance and creative prompts, including writing and speaking, references and allusions, literary analysis and critique, language style and tone, translations and multilingual capabilities, content creation, and interactive literary experiences.

BER PERFORMANCE ANALYSIS OF MIMO WITH AND WITHOUT BEAMFORMING AND RELAYING TECHNIQUES

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ABSTRACT

In wireless communication systems, fading is aphenomenon that can at times cause a very faint signal to be received on the other side, leading to errors in the received bits. Bit error rate (BER) needs to be reduced for better signal quality. The Beam Forming approach is one method for enhancing BER. The BER for QAM in a Rayleigh fading channel with two or more transmitter antenna and one receiver antenna, with or without beam shaping, is examined in this study. Also the BER performance is analysed using relay techniques and it is observed that BER is minimized using beam forming and relaying techniques.

STATIC RANDOM ACCESS MEMORY USINGMEMORY BLOCK FOR LOW POWER DISSIPATION

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ABSTRACT

CMOS technology feature size and threshold voltage have been scaling down for decades forachieving high integration density and high performance. The continuing decrease in the aspect ratio and thecorresponding increases in chip density and operating frequency have made power consumption a majorconcern in VLSI design. This paper provides the outline structures of Static Random Access Memory (SRAM)for low power dissipation with 6T AND 8T SRAM. The reason for attaining low power in the SRAM is byreducing the voltage at output node. The memory block of 4 BIT using 8T designed by 90nm technology withsupply voltage of 1.2V. It is implemented by using synopsys tool using custom compiler.

EFFECIENT GABOR FILTER DESIGN USING VERILOG HDL WITH MULTIPLIER-ACCUMULATOR (MAC) IMPLEMENTION

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ABSTRACT

This paper presents an enhanced Gabor filter design for image processing applications using Verilog HDL. Specifically, it applies the Reconstruct Gabor filter technique to improve standard image output. The primary objective of this work is to simplify the study, analyze, and enhance the design's efficiency and quality while maintaining its core functionality. The proposed approach focuses on addressing sizing complications and improving synthesizable coding style. The key characteristic of this method involves replacing the existing Multiplication Accumulation Unit (MAC) with another optimized MAC unit. In digital signal processing, the multiply-accumulate operation plays a crucial role, computing the product of two numbers and accumulating the result in an accumulator.

BLOOD CELL SUBTYPE CLASSIFICATION USING DEEP LEARNING

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ABSTRACT

A vital component of human bodies is blood. Despite making up only 1% of the human body, blood cells have a greater impact on disease and infection detection. These blood cell subtype classifications also aid in ensuring that patients receive the quickest-acting medical treatment and recover swiftly. To get the findings, many machine learning techniques are used, including the Feature Extraction methods (K* classifier and Decision table) and the Image Segmentation algorithms (Random Forest and MLR). Training data sets are only a certain size since labelling data requires time and money, whereas unlabelled photos play a vital role in electronic medical record systems. The convolution machine learning process is replaced by the deep learning technique, which uses hidden data from the un labelled photos to sort them into different categories. The unlabelled image is subjected to data pre-processing, four-layered classification using the CNN algorithm (convolution layer, ReLu, pooling, fully connected layer), and multi-classification of blood types. The proposed work is found to categorise the white blood cell with 95% accuracy after thorough experimental investigation.

DRIVER DROWSINESS DETECTION SYSTEM USING PYTHON, OPENCV AND RASPBERRY PI

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ABSTRACT

The number of accidents deaths can be greatly decreased by using intelligent systems to prevent auto accidents. Human mistake, such as drowsy driving, is one of the variables that significantly contribute to accidents. The system looks for symptoms of fatigue and sleepiness on a person's face while they are driving.. It is based on the image processing technique. This project presents a way to analyze and anticipate driver drowsiness with the help of built-in Python and OpenCV libraries to locate eyes in the video frames. Each frame's Eye Aspect Ratio (EAR) is calculated, and the result is compared with the threshold value. Once tiredness is identified, a warning signal or alarm is activated to alert the driver to get up and stop being drowsy. The method finds the eyes first, then checks to see if they are open or closed. The system detects the driver's inactivity if the eyes are closed for a minimum of 10 consecutive frames, determines that the person who drives is dozing off, and sends a warning signal or sets off an alert using the buzzer attached to the Raspberry Pi to wake the person up.

FAKE CURRENCY DETECTION USING CONVOLUTIONAL NEURAL NETWORKS

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ABSTRACT

In today's world, due to increasing technology like scanning, color printing, and duplicating, th eidentification of bogus notes by the human eye is almost getting impossible. Knowingly or unknowingly, due to theusage of bogus currency notes, the Indian economy is also being impacted badly. Hence, the identification of bogus currency notes is really important. Our project deals with regard to identifying whether the given sample of the currency note is real or bogus. Previously, there are many methods for the identification of bogus notes eliminating the need for manual feature extraction. Also, the results are not very accurate and hence we use deep neural networks for the recognition of bogus currency notes. In this paper, the Convolution Neural Network technique is employed for the detection of bogus currency bills. Convolution Neural Network is an architecture that directly learns from the input data and classifies the note, if the note is found to be a bogus note, then immediately a message will be sent indicating that in that specified location the bogus notes are being circulated. By doing so, the problem of bogus note circulation can be reduced and also help the society not being decieved by fraudsters.

SECURING INTERNET-OF-THINGS DATA IN A HEALTHCARE SURVEILLANCE NETWORK WITH A HYBRID ENCRYPTION ALGORITHM

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ABSTRACT

IoT-based healthcare solutions are used for remote health monitoring and diagnostics to minimize the cost of health care services. Secure data communication is crucial for treatment and monitoring. Furthermore, it is vital to safeguard the patient's information from abuse and data manipulation while it is in transit because other devices can easily trace it. IoT networks have limited CPU capability, memory, and power, making performing the expensive operations required by ciphering algorithms challenging. As a result, they require a lightweight security approach that consumes fewer resources. A hybrid cipher approach for safe data transport from IoT healthcare devices is proposed in this paper. Three cipher algorithms are used in the encryption process, including a modified, lightweight Salsa20 with 16 words (each word is 32 bits). To begin, for each block of sensing data, a five-dimensional chaotic map is employed to generate 32 keys of 64-bit length. Second, to make the produced keys appear dynamic, random shifting is performed on them. Third, an exclusive-or operation is carried out between a newly constructed key, which includes sensing data, and modified Salsa20 words. Fourth, the proposed method improves security by using the addition DNA operation between the result of the previous step and the random selection word in Salsa20 state after both have been turned into DNA form. Finally, before sending data to the server, sensor data is hashed using the SHA3-256 hash method to assure data integrity. The hash data result, the DNA result after conversion to a decimal number, and two random integers for shifting keys and picking Salsa20 words comprise the entire delivered data. Based on tests done by NIST, the suggested algorithms provide data

content security features like secrecy, authentication, and non-repudiation. They also work with all types of sensors to send secure data to the final controller.

IMPLEMENTATION OF ADDERS USING TERNARY BASED MULTIPLE VALUED LOGIC

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ABSTRACT

In today's world VLSI chips are widely used in various branches of Engineering like Voice and Data communication networks, Digital signal processing, Computers, Commercial Electronics, Automobiles, Medicine and many more. So, there have been major advances in IC technology which have both made feasible and generated great interest in electronic circuits which employ more than two discrete levels of signals such circuits called Multiple valued logic circuits, offer several potential opportunities for the improvement of present VLSI circuit designs. Multi value logic can carry more information on single line. The key benefits of MVL are Increased data density, delay, reduced dynamic power dissipation and chip area. The major area of binary logic ICs are occupied by the interconnections. The more effective utilization of interconnections is possible which uses a larger set of signals over the small area in MVL devices. The higher radix in use is the ternary (radix - 3) and Quaternary (radix - 4). In this paper our objective is to implement different high speed low power adders like RCA and CLA by using ternary based multiple valued logic. The functional verification is performed by using Xilinx ISE design suite by considering Verilog HDL.

DESIGN & IMPLEMENTATION OF DOUBLE T-SHAPE PATCHANTENNA SENSOR FOR MEASUREMENT OF ICEAND SNOW

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ABSTRACT

To design a Micro strip patch antenna with double T shaped slots at operating frequency 2.4GHz was developed for ice detection and measurement application. Detection was performed by monitoring the resonant amplitude and resonant frequency of the transmission coefficient between the antenna sensor and a wide band receiver. The patch antenna sensor is also capable of distinguishing between ice and water, respectively when compared to the bare sensor. Additionally, the antenna was sensitive to ice thickness measurement. The proposed antenna is designed to achieve better return loss (S11), VSWR and gain as compare to other existing antenna. The micro strip patch antenna was advantageous due to its planar design, directive radiation pattern, satisfactory gain, and resonant profile in its transmission and reflection coefficient for different parametric variations have been simulated in High Frequency Structure Simulator (HFSS) Ansys software.

TRAFFIC SIGN RECOGNITION USING DEEP LEARNING

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ABSTRACT

Road signs are important to ensure smooth traffic flow without bottlenecks or mishaps. Road symbols are the pictorial representations having different necessary information required to be understood by driver. Road signs in front of the vehicle are ignored by the drivers and this can lead to catastrophic accidents. This project presents an overview of the traffic sign board detection and recognition and implements a procedure to extract the road sign from a natural complex image, processes it and alerts the driver. It is implemented in such a way that it acts as a boon to drivers to make easy decisions. There are several major challenges that affects the detection and recognition process of traffic signs and makes it difficult for the driver to identify the signs in adverse weather conditions and darkness, these challenges and problems are highlighted in this study. Traffic signs are detected based on various features such as colour, shape, and texture etc. Based on these features numerous methods exists for detection of traffic signs. For traffic sign detection, You Only Look Once version V3, V4, V5 (YOLO V3, V4, V5) algorithms are used. The classification involves pretrained models LeNet-5, VGG-16, ResNet-50, a CNN model of filters dimensions 3 × 3, 5 × 5 from which the most efficient filter is chosen for further classifying the image detected. This challenge will be more difficult to meet in a city like environment where multiple traffic signs, ads, parking vehicles, pedestrians, and other moving or background objects make the recognition much more difficult.

STUDY ON BRAIN TUMOR DETECTION USING MORPHOLOGICAL OPERATIONS IN MATLAB WITH GRAPHICAL USER INTERFACE (GUI)

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[1, 2, 4] Department of ECE, SOET, Sri Padmavati Mahila Visvavidyalayam, Tirupati

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ABSTRACT

Brain tumor detection plays a crucial role in early diagnosis and effective treatment planning. This research, present a MATLAB-based Graphical User Interface (GUI) for Brain Tumor Detection, incorporating a comprehensive pipeline of image processing techniques. The GUI provides a user-friendly platform, empowering medical professionals to accurately and efficiently analyze MRI brain scans. The GUI begins with text removal to eliminate any textual artifacts that may be present in the MRI scans, ensuring a clean input for subsequent processing steps. Image enhancement techniques are then applied to improve the visibility of tumor regions, enhancing the contrast and highlighting subtle features that aid in tumor identification.To address the challenge of noise and artifacts, state-of-the-art noise removal filters are integrated into the GUI. These filters effectively suppress noise while preserving essential structural details, enabling better tumor localization. The presented GUI streamlines the brain tumor detection process, making it accessible to medical practitioners without extensive image processing expertise. By combining text removal, image enhancement, noise removal, thresholding, and segmentation functionalities, the GUI provides a comprehensive and efficient tool for accurate brain tumor diagnosis, ultimately contributing to improved patient outcomes and better healthcare decision-making.

PERFORMANCE OF EVALUATION METHODS IN IMAGE FUSION

[1]K.Bhavana, [1]Y.V. Sai Anu Monica, [1]Md. Sultan, [1]M. Chisti, [1]V.Radhika

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ABSTRACT

Many algorithms and software tools have been developed for fusing panchromatic and multispectral datasets in remote sensing. Also, a number of methods have been proposed and developed for the comparative evaluation of fusion results. To this date, however, no papers have been published that analyze effectiveness and quality of the evaluation techniques. In this regard, methods that evaluate fusion quality are tested for different images and test sites. This analysis shows that in most cases the tested methods perform well, but are sometimes inconsistent with visual analysis results.

DESIGN OF FIR FILTER FOR UNDERWATER WIRELESS SENSOR NODE

[1]Pilaka Laxmi Manasa, [2]B. Keerthi Priya,

[1]Dept. of ECE,Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam, India

[2]Assistant Professor, Dept. of ECE, Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam, India

ABSTRACT

Underwater wireless networking has become a new research area due to its applications in oil exploration, underwater environment and marine life monitoring, and deep-sea surveillance. Robust and secure data acquisition in an underwater wireless sensor node (UWSN) refers to the network's ability to reliably and safely collect data from various underwater sensors while ensuring data integrity, confidentiality, and protection against potential threats and adversities present in the underwater environment. The use of digital filters aids in a variety of underwater applications, including target identification, signal categorization, and passive sonar applications. This paper focuses on the simulation and synthesis of digital filter designs for underwater sensor data applications. In this paper, Finite Impulse Response (FIR) filters are intended for low frequency and low power applications. Because of its reprogrammability, the Field Programmable Gate Array (FPGA) is used to implement the FIR filters. Digital filters are implemented using Verilog HDL. This paper focuses on the exploration of FIR filters by implementing and synthesizing two distinct orders. The Simulation and synthesis are done in Xilinx Vivado 21.2 software and testing is done using the ZYNQ-7000 ZC706 FPGA board.

QUAD PORT FRACTAL MIMO ANTENNA LOADED WITH SRR FOR WIRELESS APPLICATIONS

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[1]Department of ECE

Anil Neerukonda Institute of Technology and Sciences(Autonomous), Visakhapatnam

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Gayatri Vidya Parishad College of Engineering (Autonomous), Visakhapatnam

ABSTRACT

A Quad port Fractal Multi Input Multi Output antenna with SRR is discussed in this paper. The use of MIMO antenna in wireless application is key technique to improve the channel capacity and data rates. An important issue related with MIMO is space constraint and structure of antenna element. As MIMO antennas are closely spaced, performance of MIMO antenna is reduced due high signal correlation. The design of MIMO antenna with less mutual coupling is the major challenge. The MIMO antenna is designed to operate four bands of frequencies i.e. in lower WiMax, middle WiMax, Satellite TV and X-Band applications. The proposed antenna exhibits acceptable S-parameter values, low envelope correlation coefficient, TARC over the four bands of frequencies. Obtained envelope correlation coefficient for designed MIMO antenna is less than 0.05.

MULTIMODAL IMAGE FUSION: A PROMISING TOOL FOR BRAIN TUMOR DETECTION

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[1]Assistant Professor, Vishnu Institute of Technology,
[2]Associate Professor,GVP College of Engineering for Women,

ABSTRACT

Despite the availability of numerous tumor detection methods, brain tumor segmentation remains challenging due to the intricate characteristics of brain MRI images. Detecting brain tumors from MRI images is particularly difficult because they lack comprehensive tissue information and are unsuitable for visualizing dense structures. To address this challenge, the project proposes a novel approach of brain tumor detection through multimodal image fusion using deep learning. By fusing the images, a more efficient and reliable outcome for detecting cancerous tissue and facilitating early detection of brain tumors can be achieved. Medical image fusion plays a crucial role in diagnosing brain tumors. Prior to fusion, the images undergo pre-processing, and discrete wavelet transforms are applied to both of them. The fusion technique enhances the medical image, making it more conducive to tumor detection. This process involves combining various images of the same scene into a single fused image, reducing uncertainty and redundancy while extracting vital information from the source images. Fusion of images obtained from different imaging systems, such as computed tomography (CT) and MRI, is beneficial for clinical diagnosis and treatment, as CT images are ideal for visualizing dense structures while MRI provides excellent visualization of soft tissues, making it commonly used for tumor detection and other tissue-related abnormalities. The CNN (Convolutional Neural Network) technique, specifically the VGG-19 CNN architecture with pre-trained parameters, is utilized to fuse CT and MRI images. Brain tumor detection is accomplished through watershed segmentation, which is a region-based technique relying on image morphology. It requires the selection of at least one marker (or "seed" point) within each object of the image, including the background as a separate object, to perform the segmentation effectively.

DESIGN OF AUTOMATED STUDENT PERMISSION SYSTEM USING RFID AND NODEMCU

[1]S S Kiran, [1]K Gurucharan, [2]BVR Gowri, [1]A. Mouli Sai, [1]A Aswini, [1]A Venkatesh,

[1]Electronics and Communication Engineering,

Lendi Institute of Engineering and Technology, Visakhapatnam, India

[2]Electronics and Communication Engineering,

GVP College of Engineering for Women, Visakhapatnam

ABSTRACT

Automated Student Permission System is a system that can be used to automate the process of monitoring students attendance and granting permission to students to leave college early. The system works by having a sign-out sheet placed at the college's entrance that students can access using their college ID. When a student wants to leave the college early, they log in to the electronic sign-out sheet using their college ID. The authorities can either approve or deny the request based on the information provided by the student. This system can replace the traditional paper-based process of granting permission, making it more efficient and cost-effective. It eliminates the need for manual entry and reduces the risk of errors. Furthermore, the system provides a record of all sign-out requests for auditing purposes. A RFID transponder has been implanted in every classroom, lab, library, staff room, etc. through which we will be able to locate students and staff members. There will be a website where students, teachers, and parents may check a student's attendance status and current whereabouts on campus.

DESIGN OF HIGH SPEED PARALLEL PREFIX ADDER USING TRIPLE CARRY OPERATOR

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ABSTRACT

The parallel prefix adder (PPA) performs the addition operation for N-bit simultaneously. PPA enhances the processor's performance in terms of area and speed. Hence, PPA is considered an appropriate adder in the ALU unit of the processor. In this paper, a PPA with a triple carry operator (TCO) is proposed and compared with standard PPAs having the traditional carry operator. In TCO, the generate and propagate signals of N-bits of an adder are combined to obtain the generate and propagate signals of combined bits. The prefix structure in PPA reduces the number of levels to obtain the final carryout and sum. The proposed adder is simulated and synthesized using Xilinx ISE 14.7 and achieves less delay and area compared with the remaining adders.

MITIGATION OF PEAK TO AVERAGE POWER RATIO IN ORTHOGONAL FREQUENCY DIVISION MULTIPLEXING THROUGH SOP-PTS

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[1]Dhanekula Institute of Engineering and Technology, Vijayawada, A.P, India

ABSTRACT

Orthogonal Frequency Division Multiplexing (OFDM) is a popular multicarrier modulation technology extensively employed in 4G wireless communication systems to transmit data over a dispersive channel. To address the Peak-to-Average Power Ratio (PAPR) issue in OFDM, a technique called Partial Transmit Sequence (PTS) is commonly utilized. The PTS method involves dividing the data block into non-overlapping sub-blocks and then combining them using phase factors to mitigate PAPR. However, the conventional PTS approach encounters a challenge as the number of sub-blocks increases, leading to exponentially growing search complexity due to the need to explore all possible phase factor combinations. To overcome this complexity and effectively reduce PAPR, a novel approach is proposed in this study, known as Particle Swarm Optimization (PSO)-based PTS technique. PSO is a bio-inspired algorithm capable of efficiently searching the solution space to find optimal solutions. By employing PSO, the proposed PSO-PTS method achieves a significant reduction in computational complexity, particularly for large sub-blocks, while obtaining lower PAPR levels. The simulation results demonstrate that the PSO-PTS approach outperforms the conventional PTS method

LOW POWER APPROXIMATE MULTIPLIER FOR IMAGE PROCESSING APPLICATIONS

[1]M Ravindra

[1]Research scholar ,Department of ECE, NIT Patna

ABSTRACT

Approximate computing, frequently used in error tolerant applications, aims to achieve higher circuit performances by allowing the possibility of inaccurate results, rather than guaranteeing a correct outcome. In this research paper, approximate multipliers are designed to reduce the computational time and power delay product. Using the proposed approximate multiplier, it is observed that Normalized Error Distance (NMED), Mean Relative Error Distance (MRED) and Power Delay Product (PDP) are reduced. The proposed architectures are synthesized using 90-nm CMOS standard cells. Low power approximate multipliers of various sizes (8, 16 and 32 bit) are designed and their performance is compared with the existing general multipliers. The synthesis results shows that the delay and power are reduced when compared to existing multipliers. The image processing operations image smoothening and edge detection are implemented using the proposed. Image processing applications are shown to demonstrate the effectiveness of the proposed multipliers.

STUDY ON WOMEN SECURITY SYSTEM USING IOT

[1] K. Bhavitha, [1] K.Mohana [1]N.K.K.Harshita

[1]Department of ECE, GVPCEW

ABSTRACT

Despite India is rapid economic development and status as a global power, crimes against women remain a concerning issue. In response to this problem, we propose a system aimed at reducing atrocities faced by women, such as abuse and harassment. The device is designed to be compact and easily integrated into daily wearables. It comprises several components, including a Push Button, ESP32 microcontroller with Wi-Fi capability, GPS and GSM modules, and an ESP32 Camera module. When a woman senses danger or feels unsafe, she can activate the device by pressing the push button. Once activated, the system will promptly send an SMS containing the woman's current location to pre-registered mobile numbers. Additionally, the ESP32 Cam will capture live photos and send them to the designated guardians' mobile devices. This immediate alert and photo documentation aim to empower women and provide a sense of security in vulnerable situations.

PERFORMANCE ANALYSIS OF LOW EARTH ORBIT CONSTELLATION BASED ON BEI-DOU SATELLITE

[1]Y. Yoshika Sushma [1]L. Sarika , [1]B. Vijay Lakshmi

[1]Department of ECE, Gayatri Vidya Parishad College Of Engineering For Women

ABSTRACT

The paper of "The lower Earth orbit (LEO) using BD (Bei Dou) satellite" it may highlight the utilization of the Bei Dou satellite constellation for communication, navigation, and remote sensing purposes in the lower Earth orbit. The paper could touch upon the advantages of using Bei Dou satellites in LEO, such as improved accuracy, coverage, and data transmission capabilities, leading to enhanced services for various applications. Additionally, Furthermore, it illuminates the promising prospects of synergizing Bei Dou technology with other satellite networks, thereby amplifying global connectivity and fortifying data availability on a grand scale. it will highlight the potential benefits of integrating Bei Dou technology with other satellite systems to further enhance global connectivity by doing the analysis.

DETECTION OF PNEUMONIA IN COVID-19 PATIENTS USING X-RAY IMAGES

[1]S S Kiran, [1]K Gurucharan, [1]M. Rajan Babu, [1]S. Durgamadhuri,
[1]M. Swathi, [2]M. Sravanthi

[1]Department of ECE, Lendi Institute of Engineering and Technology,
[2]Department of ECE, Trainee Software Engineer, Prolifics, Hyderabad,

ABSTRACT

This study explores the use of chest X-ray image analysis and deep learning methods to identify pneumonia in COVID-19 patients. Due to the pandemic, Proper as well as immediate examination of COVID-19 is now essential for patient care and disease control. This study proposes a novel approach that uses convolutional neural networks (CNNs) to automatically predict pneumonia in COVID-19 patients using chest X-ray images. In this study, an X-ray of the chest that have been categorized are one-hot encoded using machine learning techniques like LabelBinarizer and then converted into emphatic form applying the categorical functionality of Python. Following that, a method for identification is created utilizing a range of the deep learning features, including convolutional neural network (CNN), VGG16, average pooling 2D (AP2D), dropout, flatten, dense, and input. The proposed approach was evaluated on a 5000 chest X-ray images in the dataset, obtaining excellent classification accuracy of 94%, sensitivity of 60%, and specificity of 100% for healthy and infections with pneumonia. The results demonstrate The possibility of using deep learning methods with accurately and quickly identify pneumonia in COVID-19 patients, which can enhance the health of patients and contribute to preventing the disease's spread. The method carefully reduces training loss while also improving accuracy.

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University Grants Commission
(शिक्षा मंत्रालय, भारत सरकार)
(Ministry of Education, Govt. of India)
बहादुर शाह जफर मार्ग, नई दिल्ली–110 002
Bahadur Shah Zaffar Marg,
New Delhi – 110002

No.F. 2-10/2023(AC-Policy) **November, 2023**

The Registrar,
Andhra University,
Vishakhapatnam, Andhra Pradesh-530 003

13 NOV 2023

Sub:- Conferment of Autonomous Status to Gayatri Vidya Parishad College of Engineering for Women, Kommadi, Madhurawada affiliated to Andhra University

Sir/Madam,

This has reference to the proposal submitted by Gayatri Vidya Parishad College of Engineering for Women, Kommadi, Madhurawada affiliated to Andhra University for conferment of autonomous status.

The Commission at its meeting held on 03.11.2023 has approved the recommendation of the Standing Committee on Autonomous Colleges to confer the autonomous status to **Gayatri Vidya Parishad College of Engineering for Women, Kommadi, Madhurawada affiliated to Andhra University** for a period of 10 years from the academic year 2024-2025 to 2033-2034 as per clause 7.5 of the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023.

The University, is therefore, requested to issue necessary notification within 30 days regarding the grant of autonomous status to the College as per UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023.

The autonomous college is required to abide by all the provisions of the UGC Regulations for Autonomous Colleges. The Regulations are available on the UGC website, www.ugc.gov.in. Noncompliance of the requirements and conditions prescribed in the said Regulations shall attract action as per Clause -13 of the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023. The college should apply to University Grants Commission for extension of autonomous status at least three months before the completion of autonomy period.

Yours faithfully,

13/11/2023

(Dr. Gopi Chand Merugu)
Deputy Secretary

Cont..

Copy to:-

1. **The Principal Secretary,**
   Andhra Pradesh State Council of Higher Education
   Sree Mahendra Enclave, NRI Block (C-Block)
   I & II Floors, Opposite State Bank of India
   Adjacent to NH-16, Tadepalli, Guntur-522 501

2. **The Principal,**
   Gayatri Vidya Parishad College of Engineering for Women,
   Kommadi, Madhurawada

   (i) The College is advised to go for the required NAAC/NBA accreditation at least six months before the expiry of current validity and obtain the grading NAAC/NBA as per the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023 and intimate the Same to UGC to revisit the above decision, if required.

   (ii) The College/Institute is advised to submit a report regarding Examination Cell and constitution of Statutory Bodies as required under Clauses 11 and 12 of the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023 to ensure proper management of academic, financial and general administrative affairs. Non compliance of the above shall attract action as per Clause -13 of the UGC Regulations – 2023.

   (iii) The College/Institute is advised to take necessary steps for implementation of NEP 2020 and intimate the UGC.

13/11/2023

(Ajay Kumar Joshi)
Under Secretary