2022 Second International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT 2022)

Bhilai, India
21-22 April 2022

Pages 1-619
# TABLE OF CONTENTS

A DDoS Attack Detection on Cloud Framework Using Improved Features Based Machine Learning Approach ................................................................................................................................. 1
   
   Ravi Bhargav, Vishal Jain, Manish Verma

A Method for Waste Segregation Using Convolutional Neural Networks ................................................................. 7
   
   Jash Shah, Sagar Kamat

Embedding Real-Time Rendered Frames from Vulkan and OpenGL into .NET C# UI .................................................. 12
   
   David Szabo, Zoltan Illes

ACH Reference Model- a Model of Architecture to Handle Advanced Cyberattacks ................................................. 18
   
   G K Sudhina Kumar, K Krishna Prakasha, Balachandra Muniyal

Proficient Evaluation of Visual Cryptography Using Transposition Cipher and Bit Reversal Techniques ................................................................. 24
   
   Archishman Udaysinha Zanzaney, Chaitanya Krishna Sharma, Lakshya Jain, C Gururaj

Video Captioning Based on Image Captioning as Subsidiary Content ........................................................................... 29
   
   J Vaishnavi, V Narmatha

   
   Smita Sagar Gupta, Neetesh Gupta, Bhupendra Verma

Self Risk Assessment Model Embedded with Conversational User Interface for Selection of Health Insurance Product ................................................................................................................................. 40
   
   V Ilango, V R Uma, Shamitha S Kotekani, M Anand Shankar Raja

A Comparison Between Different Kernels of Support Vector Machine to Predict Cardiovascular Diseases Using Phonocardiogram Signal ......................................................................................... 46
   
   Faiyaz Fahim, Md Tanvir Ahmed, Md Nadim Mahmud Shuvo, Md Rabiul Islam

Traffic Prediction for Intelligent Transportation System Using Machine Learning ................................................................. 50
   
   V Swathi, Sirisha Yerraboina, G Mallikarjun, M Jhansirani

Security Aspects of the Internet of Drones (IoD) .............................................................................................................. 54
   
   Sudhanshu Maurya, M M S Rauthan, Rohan Verma

Investigation of New Protocol: Cyclic Shift in Aggressive Packet Combining Scheme to Combat the Error in Same Bit Location .............................................................................................................. 60
   
   Mayuri Kundu, Neeruganti Vikram Teja, Swarnendu Kumar Chakraborty

Comparison of Performance of Machine Learning Algorithms for Cervical Cancer Classification .............................. 64
   
   Hamza Karani, Ashish Gangurde, Gauri Dhumal, Waidehi Gautam, Samiksha Hiran, Abha Marathe

Blackhole Attack Detection Based on Trust Calculation Mechanism in Wireless Sensor Networks ............................ 71
   
   A Revathi, S G Santhi

Design of the Modified D-LEACH Based Routing Protocols for the Dense Deployment Based WSN ................................................................. 78
   
   Pavan Kumar Goyal, Niteesh Kumar Gupta
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symmetry-Protected Topological Phase Classification Using Hybrid Quantum Convolutional Neural Network with Three Quantum Filters</td>
<td>83</td>
</tr>
<tr>
<td>J Arun Pandian, K Kanchanadevi, Pasupuleti Sandeep, S C Dattatreya, S Naga Sai Anil</td>
<td></td>
</tr>
<tr>
<td>Single Server Queueing Model with Multiple Working Vacation and with Breakdown</td>
<td>89</td>
</tr>
<tr>
<td>M Seenivasan, S Chandiraleka</td>
<td></td>
</tr>
<tr>
<td>Classification of Fruits Using Convolutional Neural Networks</td>
<td>94</td>
</tr>
<tr>
<td>Roshani Raut, Anuja Jadhav, Chaitrali Sorte, Anagha Chaudhari</td>
<td></td>
</tr>
<tr>
<td>Improve Security Using Steganography and Cryptography Based on Smartphone Users Locations</td>
<td>98</td>
</tr>
<tr>
<td>Anfal Mahmood Ahmed, Ahmed Sami Nori</td>
<td></td>
</tr>
<tr>
<td>A Deep Transfer Learning-Based Approach to Detect Potato Leaf Disease at an Earlier Stage</td>
<td>105</td>
</tr>
<tr>
<td>Md Rahmatul Kabir Rasel Sarker, Nasrin Akter Borsha, Md Sefatullah, Azizur Rahman Khan, Somaiya Jannat, Hasmot Ali</td>
<td></td>
</tr>
<tr>
<td>Deep Learning Approach for Sentimental Analysis of Hotel Review on Bengali Text</td>
<td>110</td>
</tr>
<tr>
<td>Jannatul Jahan Bonny, Nazhat Jabeen Haque, Md Rohmat Ulla, Proma Kanungoe, Zahid Hassan Ome, Mohd Istiaq Hossain Junaid</td>
<td></td>
</tr>
<tr>
<td>Performance Comparison of Multiple Supervised Machine Learning Algorithms for COVID-19 Mortality Prediction</td>
<td>117</td>
</tr>
<tr>
<td>Auishik Pyne, Md Shamim Anower</td>
<td></td>
</tr>
<tr>
<td>Plant Disease Prediction Using Transfer Learning Techniques</td>
<td>121</td>
</tr>
<tr>
<td>A Lakshmanarao, N Supriya, A Arulmurugan</td>
<td></td>
</tr>
<tr>
<td>Stock Market Prediction Using Long Short-Term Memory (LSTM)</td>
<td>126</td>
</tr>
<tr>
<td>Mohammad Abu Nadif, Md Towhidur Rahman Samin, Toheedul Islam</td>
<td></td>
</tr>
<tr>
<td>Real Time Signature Forgery Detection Using Machine Learning</td>
<td>132</td>
</tr>
<tr>
<td>P Gowri, G Sivapriya, K Karthick Raja, N K J Kamaleshwar, N Kesavaraj</td>
<td></td>
</tr>
<tr>
<td>Prediction of Maintenance Time and IoT Device Failures Using Artificial Intelligence</td>
<td>137</td>
</tr>
<tr>
<td>A Geetha Devi, Anuradha T, Rabindarayan Satpathy, Malabika Nayak, M Reka, Prakash Kumar Mohapatra</td>
<td></td>
</tr>
<tr>
<td>P4 Based Load Balancing Strategies for Large Scale Software-Defined Networks</td>
<td>142</td>
</tr>
<tr>
<td>Manasa Kulkarni, Bhargavi Goswami, Joy Paulose</td>
<td></td>
</tr>
<tr>
<td>A Deep Learning Based Image Steganalysis Using Gray Level Co-Occurrence Matrix</td>
<td>149</td>
</tr>
<tr>
<td>Bibek Ranjan Ghosh, Siddhartha Banerjee, Ayush Chakraborty, Swapnajoy Saha, Jyotsna Kumar Mandal</td>
<td></td>
</tr>
<tr>
<td>Implementation of Logistic Map Based Differential Evolution for Channel Distribution in Cognitive Radio Networks</td>
<td>157</td>
</tr>
<tr>
<td>Vinay Kumar Addala, Bhargav Pasupuleti, Vanamala Venkata Jainendrababu, J R K Kumar Dabbakuti, Kiran Kumar Anumananda</td>
<td></td>
</tr>
<tr>
<td>Document Classification and Automatic Grading</td>
<td>162</td>
</tr>
<tr>
<td>G L Sankara Subramaniyan, S Yajith Vishwa, T Togith, Uma K V, C Deisy</td>
<td></td>
</tr>
<tr>
<td>Machine Learning Algorithms for 5G and Internet-Of-Thing (IoT) Networks</td>
<td>166</td>
</tr>
<tr>
<td>Krishan Kanti Singh Gautam, Rajendra Kumar, P Chandra Sekhar, Nellore Manoj Kumar, Kanusu Srinivasa Rao, M Kalyan Chakravarthi</td>
<td></td>
</tr>
</tbody>
</table>
A Study of Brain Tumor Segmentation and Classification Using Machine and Deep Learning Techniques..................................................................................................................... 170
Anil Kumar Mandle, Satya Prakash Sahu, Govind Gupta

SynthPipe : AI Based Human in the Loop Video Dubbing Pipeline..................................................................................................................... 177
Anthony John Dsouza, Abigail Rachel Kumar, Akhil Koshy Wilson, Rupali Deshmukh

Lifetime Maximization of Bin Level IoT Sensor and Route Optimization for Smart Waste Management in Hilly City Shimla, India: A Comparative Analysis ........................................................................... 182
Meenakshi Shruti Pal, Munish Bhatia

An Effective Detection of Version Number Attacks in the IoT Using Neural Networks............................................................................................... 188
L Antony Rosewelt, B Sreedevi, C Gomathi Shivani

Voice Prescription Using Natural Language Understanding................................................................................................................................. 195
Danish Ali Shaikh, Burhanuddin Fatehi, Atif Khan, Amaan Shaikh, Nafisa Mapari

An Autonomous Internet of Things (IoT) Pipeline Network for Image Acquisition in Agricultural Applications..................................................................................................................... 201
Amarjeet Singh, N Jeebaratnam, U Sesadri, Kanusu Srinivasa Rao, Nellore Manoj Kumar

Dhirendra Kumar, Pulkit Sharma, Anupama Anupama, Parth Sharma

Music Note Series Precipitation Using Two Stacked Deep Long Short Term Memory Model ..................................................................................................................... 212
Carmel Mary Belinda M J, M Shyamala Devi, J Arun Pandian, R Aruna, S Ravikumar, K Antony Kumar

Survey Comparison of Monkey-Based Optimization Techniques in LEACH Protocol WSNs ..................................................................................................................... 217
Bharath Kumar Narukullapati, Jhansi Lakshmi Potharlanka, Gopinadh Panuganti

A Hospital Application Involving Deep Learning Architecture for Detecting Parkinson’s Disease ..................................................................................................................... 222
R Kumaran, S Shanthini

M/M/1 Queue with Server Breakdown, Single Working Vacation, State Reliant Customers and Feedback..................................................................................................................... 227
M Seenivasan, H Manikandan, J Shiny Epciya

Decision Tree Technique for Arabic Sentences Classification with Preprocessing of NLP by Using of Words Features ........................................................................................................................................... 232
Faiez Musa Lahmood Al-Rafaye, Hakeem Imad Mhaibes

Federation Learning for Intrusion Detection Methods by Parse Convolutional Neural Network ..................................................................................................................... 238
Jiechen Luo, Xuelan Yang, Muamer N Mohammed

Federation Learning of Optimized Convolutional Neural Network Structure for Intrusion Detection ..................................................................................................................... 245
Xuelan Yang, Jiechen Luo, Muamer N Mohammed

An Improved Faster and Novel Methodology for Diabetes Ulcer Classification Based on Customized CNN........................................................................................................................................... 252
D Rajalakshmi, R Tharunya

Hidden Image Watermarking Based on Frequency Domain Technique..................................................................................................................... 258
Ankala Stallin, Kagga Pavan Kumar, B Prabha
Diagnosis of Pneumonia Using Deep Learning Techniques .......................................................... 264
N Krishnamoorthy, K Nirmaladevi, T Kumaravel, K S Sanjay Nithish, S Sarathkumar, M Sarveshwaran

IOT-Enabled Vertical Farming Monitoring System Using Big Data Analytics ........................................... 269
Javvaji Gopi Chand, Kodati Susmitha, Abbaraju Gowthami, Kambhampati Manohar Chowdary, S K Khaleel Ahmed

Programmable Variable-Length Pseudo-Random Sequence Generator ...................................................... 275
Doriginti Mohammad, Kanna Rakesh, Geethu Remadevi Somanathan, Ramesh Bhakthavatchalu

Real-Time Face Emotion Recognition and Visualization Using Grad-CAM .............................................. 279
Tashreef Abdullah Araf, Ayesha Siddika, Sadullah Karimi, Md Golam Rabiul Alam

Contention-Based Access Protocol for Intra-Cluster Communications in Mobile Ad Hoc Networks .............. 284
Reshma Sasikumar, Dhadesugoor R Vaman, Sojan Lal Pouluse

Movie Recommendation Based on Mood Detection Using Deep Learning Approach ...................................... 290
Tahasin Elias, Umma Saima Rahman, Kazi Afrime Ahamed

Effective Classification of Ibm Hr Analytics Employee Attrition Using Sampling Techniques ............................ 296
P Juhi Padmaja, D Vinoodhini, K V Uma

Hybridization of Tabu Search and Grey Wolf Optimizer for Improved Workflow Scheduling and Optimization of Resources in Edge Computing ................................................................................... 302
Punar Rahul, A J Singh

Analysis on Encrypted Biometric Template Protection Schemes ............................................................... 309
R Vasuki R, G Angeline Prasanna

A Unified and Semantic Model Approach for Histopathologic Cancer Detection Based on Deep Double Transfer Learning .......................................................................................................................... 313
R Udendhran, B Sreedevi, G Sneha

Automated Attendance Control System for Health Center Staff ...................................................................... 320
Rosa Perez-Siguas, Hernan Matte-Solis, Eduardo Matte-Solis, Lourdes Matta-Zamudio

Analysis of Classification Based Predicted Disease Using Machine Learning and Medical Things Model ................................................................. 324
Hemanta Kumar Bhuyan, T Arun Sai, M Charan, K Vignesh Chowdary, Biswajit Brahma

Dried Fish Classification Using Deep Learning ............................................................................................... 330
Marfi Akter Laboni, Ifiat Firozy Rimi, Shrabosty Deb, Farhina Afrin, Most Hasna Hena

Panacea: A Novel Architecture for Electronic Health Records System Using Blockchain and Machine Learning ................................................................................................................................................. 336
Deep Rahul Shah, Dev Ajay Dhawan, Samit Nikesh Shah, Pannag Rajesh Shah, Sofia Francis

Biometric Facial Security System with Telemetry Module ............................................................................. 343
Brian Meneses-Claudio, Luis Tarmono-Bernuy, Melissa Yauri-Machaca, Enrique Lee Huamani

Classification of Product Review Sentiment by NLP and Machine Learning ................................................ 348
Rely Das, Md Forhad Hossain, Taufig Ahmed, Ananya Devanath, Shahnaz Akter, Abdus Sattar
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R Jerry Samuel, J Julanta Leela Rachel, A Bhuvaneswari</td>
<td></td>
</tr>
<tr>
<td>Cultivating Tulip at Extent by Using Machine Learning in Context to Bangladesh</td>
<td>364</td>
</tr>
<tr>
<td>Md Riad Hasan, Abir Abdullha, Md Forhad Hossain, Abdus Sattar</td>
<td></td>
</tr>
<tr>
<td>Fine Tuning (Diagnosis) of Machine Learning Algorithm (Model) for Optimization</td>
<td>368</td>
</tr>
<tr>
<td>Uday Bhan Trivedi, Priti Mishra</td>
<td></td>
</tr>
<tr>
<td>Automatic Vascular Detection System for the Part of the Forearm of Patients</td>
<td>374</td>
</tr>
<tr>
<td>Rosa Perez-Siguras, Hernan Matta-Solis, Eduardo Matta-Solis, Lourdes Matta-Zamudio</td>
<td></td>
</tr>
<tr>
<td>CBMIR: Content Based Medical Image Retrieval Using Hybrid Texture Feature Extraction Method</td>
<td>378</td>
</tr>
<tr>
<td>B Ramamurthy, M Prasanna</td>
<td></td>
</tr>
<tr>
<td>Assessment of Influence of Non-Plastic Fines on Liquefaction Potential of Sand Using a Deep Learning Technique</td>
<td>385</td>
</tr>
<tr>
<td>J Naveen Narayanan, K Premalatha, K Raja, K Arumugam</td>
<td></td>
</tr>
<tr>
<td>ResMintage: Leveraging Blockchain Technology to Share Hardware Resources</td>
<td>391</td>
</tr>
<tr>
<td>Meet Shah, Ankit Vishwakarma, Krish Sukhani, Nikahat Mulla</td>
<td></td>
</tr>
<tr>
<td>Identification of Significant Risk Factors and Impact for ASD Prediction Among Children Using Machine Learning Approach</td>
<td>397</td>
</tr>
<tr>
<td>Asifa Afsari Hemu, Rabeya Begum Mim, Md Mamun Ali, Md Nayer, Kawsar Ahmed, Francis M Bui</td>
<td></td>
</tr>
<tr>
<td>YOLO_CC: Deep Learning Based Approach for Early Stage Detection of Cervical Cancer from Cervix Images Using YOLOv5s Model</td>
<td>403</td>
</tr>
<tr>
<td>Accurate Stock Prices Prediction on Grouped Time Series Data Using Recurrent Neural Network Variants</td>
<td>408</td>
</tr>
<tr>
<td>Anusha Chintam, G Rajendra Kumar, D Chandramouli, J Anitha Rani, M A Praveen</td>
<td></td>
</tr>
<tr>
<td>An Ensembled Intracranial Hemorrhage (ICH) Subtype Detection and Classification Approach Using a Deep Learning Models</td>
<td>414</td>
</tr>
<tr>
<td>Naga Raju Sangepu, S Prince Mary, Nandam Gayatri</td>
<td></td>
</tr>
<tr>
<td>Importance of Initialization in K-Means Clustering</td>
<td>420</td>
</tr>
<tr>
<td>Anubhav Gupta, Antriksh Tomer, Sonika Dahiya</td>
<td></td>
</tr>
<tr>
<td>Tushar Das, Md Nazmul Hossain, S K Mushfiqur Rahman, Tarunnam Parvin, Kawsar Ahmed, Francis M Bui</td>
<td></td>
</tr>
<tr>
<td>Octagon Shell Based Image Steganography for Avoiding Human Visual System with Lower Computational Time</td>
<td>432</td>
</tr>
<tr>
<td>Subhadip Mukherjee, Sunita Sarkar, Somnath Mukhopadhyay</td>
<td></td>
</tr>
<tr>
<td>Automated Prediction of Liver Disease Using Machine Learning (ML) Algorithms</td>
<td>437</td>
</tr>
<tr>
<td>Aviral Srivastava, V Vineeth Kumar, T R Mahesh, V Vivek</td>
<td></td>
</tr>
<tr>
<td>Deep Learning Based Underwater Image Enhancement Using Deep Convolution Neural Network</td>
<td>441</td>
</tr>
<tr>
<td>Sharmita Ray, Amit Baghel, Vimal Bhatia</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Analysis and Winning Prediction in T20 Cricket Using Machine Learning</td>
<td>447</td>
</tr>
<tr>
<td>Shristi Priya, Ankit Kumar Gupta, Aman Dwivedi, Aryan Prabhakar</td>
<td></td>
</tr>
<tr>
<td>Design of U-Slot Microstrip Patch Antenna for Wireless Applications</td>
<td>451</td>
</tr>
<tr>
<td>Shashi Kant Dargar, Amit Gupta, Mohd Sabir, Adhi Lakshmi</td>
<td></td>
</tr>
<tr>
<td>Component Handling Automated Guided Vehicle—A Cyber Physical System Case Study</td>
<td>456</td>
</tr>
<tr>
<td>Sujee A Soundattikar, V R Naik, C V Adake</td>
<td></td>
</tr>
<tr>
<td>Enhancement of Spectrum Efficiency in Satellite Communication Applying Prediction Model of</td>
<td>462</td>
</tr>
<tr>
<td>Machine Learning Technique</td>
<td></td>
</tr>
<tr>
<td>Sakshi Sirohiya, Amit Baghel, Vimal Bhatia</td>
<td></td>
</tr>
<tr>
<td>On-Board Antenna Tracking System for HTS Satellites: ISRO’s First In-Orbit Success on</td>
<td>468</td>
</tr>
<tr>
<td>GSAT-19</td>
<td></td>
</tr>
<tr>
<td>Pankaj Kr Gupta, Santosh Lacheta, N M Desai</td>
<td></td>
</tr>
<tr>
<td>WiGig WiFi Performance with Multi-Impairment Environments in MATLAB Simulink</td>
<td>474</td>
</tr>
<tr>
<td>Fatima Faydhe Al-Azzawi, Saba Dhey Abed, Majida Saud Ibrahim</td>
<td></td>
</tr>
<tr>
<td>HLS Implementation of Quantum Shor’s Algorithm Using Matrix Pruning</td>
<td>481</td>
</tr>
<tr>
<td>Juhi Wani, Tarun Kumar Alamsetty, Rushikesh Gherde, Vanita Agarwal</td>
<td></td>
</tr>
<tr>
<td>A Design of Circular Integrated Rectangular Slot (CIR-S) Antenna for Broad Band Wireless</td>
<td>485</td>
</tr>
<tr>
<td>Applications</td>
<td></td>
</tr>
<tr>
<td>N Porchelvi, S Titus</td>
<td></td>
</tr>
<tr>
<td>Methods of Teaching Programming with Raspberry Pi</td>
<td>489</td>
</tr>
<tr>
<td>Szilard Korom, Zoltan Illes</td>
<td></td>
</tr>
<tr>
<td>Analysis of Myocardial Infarction in CMR Images Using Hybrid Level Set Based Segmentation</td>
<td>494</td>
</tr>
<tr>
<td>and Regional Ventricle Contractility Analysis</td>
<td></td>
</tr>
<tr>
<td>M Mathulakshmi, G Kavitha</td>
<td></td>
</tr>
<tr>
<td>Channel Prior Based Retinex Model for Underwater Image Enhancement</td>
<td>499</td>
</tr>
<tr>
<td>Sathvik Srinivas, V Ramakrishna Siddharth, Surya Dutta, Nikhil S Khare, Lavanya Krishna</td>
<td></td>
</tr>
<tr>
<td>Improved DWT Algorithm for Filtering of MRI Images for an Efficient Diagnosis</td>
<td>509</td>
</tr>
<tr>
<td>R Remya, B Priestly Shan, K Umamaheshwari, D Jeba Derwin, D Lavanya</td>
<td></td>
</tr>
<tr>
<td>Parallel Network - a Deep Learning Approach for Blood Vessel Segmentation in Retinal Fundus</td>
<td>517</td>
</tr>
<tr>
<td>Images</td>
<td></td>
</tr>
<tr>
<td>G Sivapriya, P Gowri, V Praveen, Vishnu Varshini, S Sanjeevi, B Tharani</td>
<td></td>
</tr>
<tr>
<td>Diagnosis of Early-Stage Diabetic Retinopathy in Digital Fundus Images</td>
<td>524</td>
</tr>
<tr>
<td>D Lavanya, D Jeba Derwin, R Remya, B Priestly Shan, O Jeba Singh, K Umamaheswari</td>
<td></td>
</tr>
<tr>
<td>Performance Measures of Spatially Multiplexed MIMO-OFDM System Using Different Modulation</td>
<td>529</td>
</tr>
<tr>
<td>Techniques</td>
<td></td>
</tr>
<tr>
<td>A Purna Satish, A Tejaswini, Ch Pavan Kumar, A Ashraf, K Akash, K V M Subba Reddy</td>
<td></td>
</tr>
<tr>
<td>Smart Water Flow Meter for Improved Measurement of Water Usage in a Smart City</td>
<td>534</td>
</tr>
<tr>
<td>N Sushma, H N Suresh, J Mohana Lakshmi</td>
<td></td>
</tr>
<tr>
<td>Descriptive and Predictive Analytics on Electronic Health Records Using Machine Learning</td>
<td>540</td>
</tr>
<tr>
<td>V Anandi, M Rames</td>
<td></td>
</tr>
</tbody>
</table>
Automated MRI Brain Tumour Segmentation and Classification Based on Deep Learning
K Srilatha, P Chitra, M Sumathi, I Mary Sajin Sanju, F V Jayasudha........................................................................................................................................................ 546

Comparative Study of PCF Background Materials for Terahertz Region................................................................. 552
Shubham Thakur, Jyoti Kedia, Neena Gupta

Modified Design of STBC Encoder for Reducing Non-Linear Distortions in OFDM Channel
Estimation......................................................................................................................................................... 558
Shashank Kumar Singh, Amit Kumar

Frequency Selective SIW Filter Design .................................................................................................................. 563
Rahul Tiwari, Ashutosh Srivastava, K Venkateswaran

Multiple Object Detection and Segmentation for Remote Sensing Images........................................................... 567
H Kareemullah, P Nirmal Kumar, Deepa Jose, P Meenakshi

Blood Pressure Measurement System Visualized Through a Mobile Application.................................................. 572
Rosa Perez-Siguas, Hernan Matta-Solis, Eduardo Matta-Solis, Lourdes Matta-Zamudio

Design of a Body Temperature Measurement System Made Through an Unmanned Aerial Vehicle ............. 576
Rosa Perez-Siguas, Hernan Matta-Solis, Eduardo Matta-Solis, Lourdes Matta-Zamudio

Design of a Face Mask Detection System to Control the Entry of People to a Medical Center ......................... 580
Rosa Perez-Siguas, Hernan Matta-Solis, Eduardo Matta-Solis, Lourdes Matta-Zamudio

Renal Calculi Detection Using Image Processing .................................................................................................. 584
Govind Raj R, Riya Cyriac, D Pamela, P Manimegalai, Prawin Angel Michael

High Frequency Response Pulse Processing Front-End for the Radiation Detector ........................................ 588
V B Neha, Balaram Mohanty, Abhishek Basu, Mohammed Salah Shaikh, Sridhar Bonda, Irfan Mirza

Food Review Analysis and Sentiment Prediction Using Machine Learning Models ........................................... 592
Dhruv Gupta, Ausho Roup, Diksha Gupta, Avinash Ratre

Wavelet Based Classification of Finger Movements with Machine Learning Classifier .................................. 599
M Karuna, Ippili Krishna Rao, M Vijay Kumar, Sitaramanjaneeya Reddy Guntur

Analyzing the Effect of Various Delay Approximation Techniques on the Delayed Third-Order
Process Model ................................................................................................................................................ 603
A Rajyan, A Verma, P Juneja

Evaluating the NDVI Based Rice and Potato Yield Prediction Map Using GIS Geostatistical
Environment ............................................................................................................................................... 608
Chiranjit Singha, Kishore C Swain

An Energy-Efficient Long Hop High Priority Algorithm for IoT Resource Management .................................. 615
G Deepa, R Padma Priya, S Priyadharsini, V Sabarinath

An Aperture Fed Frequency Reconfigurable Patch Antenna for X-Band Applications .................................... 620
Prem Nath Suman, Gajendra Kant Mishra

IoT Based Smart Sewerage Management System for Moradabad City .............................................................. 623
Deepti Shinghal, Amit Saxena, Amit Sharma, Kshitij Shinghal, Rajul Misra
Morphology Based Quality Estimation of Cocoa Beans Using Digital Imaging .................................................. 629
Suparna Parua Biswas, Amitava Akuli, Samikshan Das, Haruna Musa Balle Baz, Fredrick Yechoah, Alokesh Ghosh

Improved Selective Mapping Technique for Reduction of PAPR in MIMO-OFDM Wireless Communication ............................................................................................................................................. 635
Vijayalakshmi Maddala

Underwater Visible Light Vertical Communication for Distinctive Chlorophyll ............................................. 639
Akshat Jain, Barun Debnath, Rachna Sharma

Automated Approach to Detect and Monitor the Development of Turner’s Syndrome .................................. 644
R Ramachandran, N Gobalakrishnan, Arun Chokkalingam

Reduction of Gaussian Noise from Computed Tomography Images Using Optimized Bilateral Filter by Enhanced Grasshopper Algorithm ..................................................................................................................... 649
Devanand Bhonsle, Jaspal Bagga, Seema Mishra, Chandrakas Sahu, Varsha Sahu, Ashutosh Mishra

Modelling Investigations on Efficiency of Miniaturized Piezoelectric Energy Harvester ............................. 658
Satyanarayana Talam, S L S Iswarya Vinjamuri, Siva Keerthi Rayuru Akkala, Padmaja Nirmala Gudipati, Gokul Phala Chandra Lankireddy

An Improved Retransmission Timeout Forecasting Algorithm for Vehicular Networks ................................ 664
M Joseph Auxilius Jude, V C Diniesh, K Prathap Kumar, S Rahul, S Nithish Kumar, E N Shanjeev

Long Range and Low Cost WDM OWC System Based on Hybrid Configuration of Optical Amplifiers .......... 669
Divya Sisodiya, Deepika Sipal

An Efficient Electromagnetic Bandgap Structure Design for Surface Wave Suppression ............................. 674
Avishek Das

Reduction of Ultrasound Images Using Combined Bilateral Filter & Median Modified Wiener Filter ............. 677
Devanand Bhonsle, Tanu Rizvi, Seema Mishra, G R Sinha, Arun Kumar, Vinay Kumar Jain

Deepti Shinghal, Kshitij Shinghal, Amit Saxena, Amit Sharma, Praful Gupta

Implementation of Low Complexity Finite Field GF (2^m) Multiplier Using Irreducible Primitive Polynomials ........................................................................................................................................... 687
Siva Ramakrishna Pillutla, Bhargava Sandeep Vankeswaram, Tejaswini Velaga, Sree Sowjanya Lellapalli, Venkata Abhinav Vadlamudi

Computationally Efficient Hybrid Algorithm for Peak to Average Power Ratio Reduction in Multiuser MIMO OFDM System .................................................................................................................. 693
Vijaya Kumar Padarti, Mukesh Ghantasala, Sivaram Naik Jarapala, Krishna Sai Nunna, Tarun Teja Suramsetty

Design of Transimpedance Amplifier Using CMOS 180nm Technology ....................................................... 699
Megha Malhotra, R S Gamad, R C Gurjar, Gireesh Gaurav Soni

MIMO Patch Antenna with Metamaterial 3.5GHz for 5G Applications ......................................................... 703
Faris Ali, Maithem Salih, Muhammad Ilyas
Design and Displacement Sensitivity Analysis of Micro Scale Piezoresistive Cantilever

Satyanarayana Talam, Dhruta Kollu, Shaik Haniff, Lokesh Pavan Nallamothu, Shaik Ayesha Begum, Rambabu Busi

707

A Multi Band Modified Circular Ring Graphene Patch Antenna for THz Applications

Smriti Jaiswal, Sakshi Maurya, Ranjana Kumari

712

Compact Dual Band Circular Hexa Fractal Antenna

Vn Lakshmi Pabbisetty, Suman Nelaturi

717

Wavelet Based Compression Analysis for Tele-Sleep Bruxism Diagnosis

Dhivya Velumani, J M Mathana, Chitra Sudhakaran, T Steffi, C Geetha Anandhi, M Gokul, K Kawyaa

722

Adaptable Reconfigurable and Power-Efficient Robots for Health Monitoring

Swathi Dasi, Nagarjuna Malladhi, Arun Tigadi, Sankarara Majji, Tulasi Radhika Patnala, V Prabhakar Reddy

727

Energy-Efficient Cooperative Communications System

Uppula Kiran, Krishan Kumar

731

A Convolutional Artificial Intelligence for Disease Classification in Fruits and Vegetables

Murali Krishna Boddepalli, Karishma Shaik, Phalgun Taraka Chaitanya Pantakota, Sai Krishna Goriparthi, Siva Reddy Vanga

738

Study and Analysis of Liu’s Algorithm for Image Segmentation

Pedapudi Vijaya Bhaskar, Nilamani Bhoi

744

Analysis of Internet Congestion Control Algorithm Under Multi-Hop Vehicular Conditions

M Joseph Auxilius Jude, V C Diniesh, E N Shanjeel, V Saran, B Tamilmani, K Prathap Kumar

751

Path Loss Modeling and Channel Characterization at 28 GHz 5G Micro-Cell Outdoor Environment

Using 3D Ray-Tracing

Viswanadham Ravuri, M Venkata Subbarao, Sudheer Kumar Terlapu, G Challa Ram

756

A Humanoid Robot for Hand-Sign Recognition in Human-Robot Interaction (HRI)

Babu Illuri, Vijaya Bhaskar Sadu, E Sathish, Madhu Valavala, T L Deepika Roy, G Srilakshmi

763

Design of Low-Profile Four Port Linear Configured Wideband MIMO Antenna for C-X-Ku-K-band Applications

N Suguna, S Revathi

768

Analysis of Blood Pressure Through Video Techniques Imaging

Deepa Itagi, V M Akhil

774

Design of CMOS IR-UWB Transmitter with UWB Antenna

Shanjida Akter, Pran Kanai Saha, Tawfiq Amin

779

Design of Compact Broadband and High Gain Folded Dipole Antenna with superstate(FDASS) for Millimetre and 5G Applications

T P S Kumar Kusumanchi, Lakshman Pappula, Sahiti Vankayalapati, D Satya Sai Nihaal Venkatasasstry, Gudala Sai Nikhil, Sai Karthik Konagalla

785

Moving Object Tracking Based on Feedback Particle Filter Technique

Nandini Agrawal, Agya Mishra

790
A Secure Anonymous Authentication and Key Agreement Schemes for Wireless Body Area Networks
Sahithi Vanjarapu, Hemanth Kumar Yadagiri, Sireesha Gedela, Sowjanya Suvvada, Venkata Sai Prasanth Mylavarapu, Arun Sekar Rajasekaran
...... 795

ECG Based Stress Detection Using Machine Learning
P Manimeghalai, J Sree Sankar, P K Jayalakshmi, Ranjeesh R Chandran, Sreedeep Krishnan, Selshia Shiny
Analysis of Potential Regions for Maritime Using QGIS Tool
N V K Ramesh, C Venkata Sai Karthik, Jampani Yugesh, B Veena Vani, B Naresh Kumar Reddy

A Time Varying Capacitance as Load to Study Area Efficient Arithmetic Circuits
A P Abirami, K Asritha, M Durga, C Saravanakumar

Performance Analysis of Various Ionospheric Delay Corrections in Single-Frequency GPS Positioning Solution at a Low Latitude Indian Location
Ram Kumar Vankadara, Bodanki Jaya Naga Sarath, Kurapati Sandeep Viswaas, Nalabolu Hari Babu, Sampad Kumar Panda

Design and Implementation of Automated PV Array Reconfiguration System
J Mouric Infant, S Parvathy

DTC-SVM Control of Induction Motor Based on Dragonfly Optimization Algorithm
Amirah J Mohammed, Raaed F Hassan

Optimum Gain Selection of Sliding Mode Control Using Grey Wolf Optimization Technique
C Dimna Denny, P Ramesh Kumar, Saghil Abhayadev

Fault Detection Technique for Lines with Series Compensation During Power Swing
Alpana Mehta, Jitendra Kumar

Implementation of Vehicles Classification Using Extreme Gradient Boost Algorithm
M Pemila, R K Pongianan, V Megala

Single Input Source-Based Boost Type Multilevel Inverter Topology
N Ajay Siva Kumar, R N Patel, C H Kamesh Rao, Yugal Kishor

Design and Implementation of a Novel Z Source Multilevel Inverter for Photovoltaic Applications
T Rampradesh, B Elangovan, G Anhumani

LSTM Based Approach for Timely Detection of Gradual Development of Electrical Fault in Power System
R Aiswarya, T Rajeev

Design and Implementation of Pulse Rate Monitoring Over Internet Using thingSpeak and ESP8266
Ahmed Samer Hatem, Jameel Kadhim Abed, Ahmed R Ajel

On-Board Health Prognosis of Lithium-Ion Battery Based on the Estimation of Internal Resistance Under Resistive and Inductive Loading Conditions
Pranjal Barman, Sushanta Bordoloi, Chinmayee Hazarika

Analysis of Electric Field Stress of 145 kV OIP Bushing Under AC & DC Voltages
Aritra Chakraborty, S Amal, Saurabh Kumar, Paul D Christian, Ananya Kundu, Ashok Mankani
Power Management in DC Microgrid Based on Distributed Energy Sources’ Available Virtual Generation ................................................................. 883
   Avula Rohit Kumar, Vikas Gupta, D Saxena

Design and Hardware Realization of Low Voltage Permanent Magnet Synchronous Motor Drive .......................... 888
   R Surya, S Allirani

Performance Prediction of GaN HEMTs Using Angelov and Curtice Models ......................................................... 892
   Famin Rahman Rakib, Refat Uddin Rafi, Mohammad Abdul Alim

Reconfigurable Transformer-Less Fault Tolerant Multiple Input Boost DC-DC Converter .............................. 896
   Monika Tanjay, R N Patel, C H Kamesh Rao, Yugal Kishor

Comparative Analysis of SRF Based Shunt Active Filter Using Grey Wolf and Eagle Perching Optimization ......................................................... 902
   B Chiranjeev Rao, Pushpa Sahu, Rajkumar Jhapte

Fault Events Recognition to Design a Current Based Transmission Line Protection Scheme Using Signal Processing Techniques ......................................................... 909
   Dharmendra Chouhan, M K Bhaskar, Om Prakash Mahela

Voltage Actuated Transmission Line Protection Scheme Applying Signal Processing Techniques .................. 915
   Dharmendra Chouhan, M K Bhaskar, Om Prakash Mahela

Loads Instability Study of the Gas Turbine Blades for Al-Khums Power Station ........................................ 921
   Qays Faraj Alshaybani, Nasar Aldian Ambark Shashoa, Ahmed J Abougarair, Elhassen Ali Omer

   Mustafa Arkwazee, Muhammad Ilyas, Ammar Dawood Jasim

Analysis and Simulation of Economic Load Dispatch in Power System ............................................................. 933
   C Sanitha Michail

Comparative Analysis of Optimal Capacitor Placement and D-STATCOM Towards Power Consumption and Power Loss Minimization ......................................................... 939
   Rakesh Kumar Sahu, Baidyanath Bag, Neha Smitha Lakra

Balancing Power Between Stages of Cascade H-Bridge Multilevel Inverter ..................................................... 945
   Alireza Sedaghati, Higino Sanchez-Sainz, Luis M Fernandez-Ramirez

Opposition Based Constriction Factor Particle Swarm Optimization for Economic Load Dispatch ........ 950
   Swathy M, C A Babu, S Ajith Kumar

Current Status of Underwater Wireless Communication Techniques: A Review ..................................................... 955
   M Afsar Ali, S Kaja Mohideen, N Vedachalam

Electrical Vehicle Charging Station Mathematical Modeling and Stability Analysis ................................ 964
   Shailesh Verma, Kalyan Chatterjee, Kumari Sandhya

Airplane Flight Route Optimization Problem with Multi-Constraints ............................................................. 970
   Vinit Kumar, Pankaj Sharma, Rani Chinnappa Naidu, Mohammad Kaleem Khodabux,
   Keshav Sewraj, Akrish Anand Mohajeer
Improving the Accuracy of Object Detection in Low Light Conditions Using Multiple Retinex Theory-Based Image Enhancement Algorithms ................................................................. 976
Aaryan Agrawal, Namrata Jadhav, Ayush Gaur, Shiwani Jeswani, Abhay Kshirsagar

Analyze the Impact of the Faults Levels on Grid-Connected Photovoltaic Systems Using DlgSILENT Power Factory ........................................................................................................... 981
Mohammad Jabbar Mnati, Majli Nema Hawas, Waleed Khalid Al-Azzawi

Performance and Comparative Analysis of PI and PID Controller-Based Single Phase PWM Inverter Using MATLAB Simulink for Variable Voltage .................................................................. 987
Md Tahmid Wara Ucchas, Mehrab Mustafiz Nuhas, Md Toufiquezaman, Al Jaber Mahmud, Md Fokhrul Islam

Generating Electrical Energy from Living Plants Using Plant-Microbial Fuel Cell Technology ............ 993
J Dharinee, K Dhayalini, R Ranjeet Skanda

Reduce Leakage Currents in Transformer Less PV System Connected to Utility Grid with H-Bridge Inverter Topology ............................................................................................................. 998
Boga Jyothi, Sudheer Vinnakoti, Madisa V G Varaprasad

Implementation of Inductive Wireless Power Transmission System for Battery Charging Applications ............................................................................................................................. 1005
Abhishek Shakya, Mayank Kumar

Implementation of Z-Source Resonant Converter for Power Factor Correction & Wireless Charging Applications ..................................................................................................................... 1010
Ayush Kumar Srivastava, Narendra Kumar

Performance Analysis of PV-Fuel Cell Hybrid System in Small Scale DC System .............................. 1016
Snehashis Ghoshal, Sumit Banerjee, Chandan Kumar Mahato, Chandan Kumar Chanda

Design of a Robotic Arm Equipped Fully Automated Burger Assembly Machine ......................... 1022
Rakesh Kumar Phanden, Tushar Chaudhary, Priyank Srivastava, Sanjeev Kumar Sharma, Pardeep Gahlot, Kapil Kumar Goyal

Detection and Location of the Fault in Power System and Monitor Different Parameters Using Sensors ........................................................................................................................................... 1029
Roshni Rahangdale, Amar Dubey, Sakshi Savariya, Syed Asif Ahmad

Substation Demand Reduction Using Combined Approach of CVR, VAr Optimization and Distributed Generation .................................................................................................................. 1033
Neha Smitha Lakra, Baidyanath Bag

A New Kurtosis Spectrogram and One Dimensional Deep CNN Model for High-Speed Bearing Lifespan Estimation on Wind Turbine ........................................................................... 1039

Comparative Analysis of Particle Swarm Optimization and Differential Evolution Algorithm to Curtail Power Consumption Using Smart Energy Meter Analytics ................................................. 1044
Amisha Srivastava, M Rizwan, Rinchin W Mosobi

Feasibility Analysis of Open Vehicle Grid Integration Platform (OVGIP) for Indian Scenario ............ 1049
Injila Sajid, Danish Iqbal, Mohammad Saad Alam, Yasser Rafat, Essam Al Ammar, Hasan Alrajhi
Protection of Utility Network with Solar Power Generation
Abhishek Gupta, Ramesh Kumar Pachar, Om Prakash Mahela

Development of Hybrid PV Wind System for EVs with Battery Management System
B Tejesh, B S Ganesh Charan, Ch Murali Krishna, P V Manitha

Higher Order Extended State Observer in Presence of Fast Varying Mismatched Uncertainty
Kaliprasad A Mahapatro, Ashitosh D Chavan, Aniket D Gundecha, Prasheela V Suryawanshi

T-Type Multilevel Inverter Based Performance Improvement of Induction Motor
Ismail M Abbas, Raed F Hassan

Optimal Reactive Power Dispatch Using Giza Pyramids Construction Algorithm
Ganesh Kumar Jaiswal, Uma Nangia, N K Jain

A Review on Charge Control Techniques for Batteries in Electric Vehicles
S Jeny Sophia, R Kavitha, P Sivakumar, Nandini G Iyer, S B Arulmozhi M, Nivethitha

Load Flow Analysis of Distribution Generator Using the Unsynchronized Measurement
Yogendra Kumar, Hemant Gupta

Application of Lyapunov’s Method for Multi-Machine Power System Stability Analysis
Amresh Kumar, S K Bhagat

Transmission Lines Fault Detection and Classification Using Deep Learning Neural Network
Jangili Rajashekar, Anamika Yadav

Travelling Wave Based Fault Location Scheme for UPFC Compensated Transmission Lines
Ruby Patel, Anamika Yadav, Saswati Mishra

Performance Analysis of an Adaptive Hysteresis Band Current Controller Based Active Power Filter
Banishree Misra, Poonam Tripathy, Rohit Mohanty, Soumya Ranjan Sahoo, Byamakesh Nayak

SEGR Analysis of Super Junction VDMOS Using HfO2 as Gate Dielectric
Md Amjath, Sanjeev Ranjan, Alok Naugarhiya

A Switched-Capacitor Based Nine-level Boost Inverter Circuit for Mining Applications
B N V V Prudhvi Krishna, B M Kumar, Ch S N Murthy

Impact of DG Integration on Passive Distribution Network
Gaurav Kumar, Rishabh Verma, Diljinder Singh

A Review on Microgrid Protection Issues and Their Counter-Measures
Umesh Kumar Sahu, B Chiranjeev Rao, Sandeep Kumar Patel

Design and Techno-Economic Analysis of a Grid-connected Solar Photovoltaic System in Bangladesh
Md Mehadi Hasan Shamim, Sidratul Montaha Silmee, Md Mamun Sikder

Research on Wind Power Prediction Based on BP Neural Network
Dongmei Hu, Zhaoyun Zhang, Hao Zhou

A Case Study on Effect of Geomagnetically Induced Current in Power Transmission
Rajnandani Yadav, R H Adware, Hari Kumar Naidu
Grid Tied Photovoltaic Based Electric Vehicle Charging Infrastructure........................................................................ 1157
Mamta Gupta, Aakash Kumar Seth, Mukhtiar Singh

Mitigation of Frequency Deviation and Voltage Fluctuations in a Wind Integrated Industrial Microgrid................................. 1163
Mesbah Ul Huq, Md Faiyaz Rahman, Moumita Barua Proma, Md Raihan Uddin Khondoker, Tareq Aziz

Modeling of Maximum Power Point Tracking Based Photovoltaic Open Loop Flyback Inverter Using Sinusoidal Pulse Width Modulation Technique for Performance Improvement........................................ 1169
Mangala R Dhotre, Prashant V Thakre

Tracking the MPP of a PV System Using an Advanced Fuzzy Logic Control Technique......................................................... 1175
Alaa Shakir Mahmood, Mustafa Teke, Raed Khalid Ibrahim, Adnan Hussein Ali, Ali A Abdurrazzaq, Marwah M Kareem

Improving Primary Frequency Control of Wind Integrated Power System with RFB ................................................................. 1182
Sunil V Chandran, P Athul Jose, M Deepak

Control Strategy for Switched-Impedance Quasi-Z-Source Inverter ...................................................................................... 1188
P Janavi, P S Manoharan, P Deepamangai

Design and Optimization of Transformer by Combining Finite Element Approach and Improved Genetic Algorithm......................................................... 1193
Uma Bharathi, Kaaviya Vharshiny, Shreshth Verma, Asmita Ajay, Bhamini Sreekeesoon, Rani Chinnappa Naidu

A Comparative Analysis of FSPV-Grid and Grid-only Systems for an Industrial Subsection...................................................... 1200
Tanu Rizvi, S P Dubey, Nagendra Tripathi, S P Makhija

Voltage Stability Prediction in Power Systems Using Modified Artificial Neural Network......................................................... 1207
A M Abdullah, R Ali, S B Yaacob, T M N T Mansur, N H Baharudin

Single Input Multi-Output DC-DC Converter for Sustainable Energy Applications ................................................................. 1213
R Arulmozhiyal, M Murali, P Thirumalini

Design of Multi-Mode Power Converter and Control Using TLBO Algorithm for Renewable Energy Based EV-Charging Systems ....................................................................................................... 1218
Thamaraiselvan S, M Murali, R Arulmozhiyal

Machine Learning Based High Impedance Fault Diagnosis in Microgrid .............................................................................. 1223
Veenita Swarnkar, Kavita Singh Diwan, Mahesh Singh, Shimpy Ralhan

Tuning Electronic, Magnetic and Transport Properties of SnS2 2D-Material by Rare-earth Metal (Y) Doping for Sensing Application: Ab-initio Modelling ........................................................................... 1227
Swati Verma, Arun Kumar, Rahul Baghel, Chanchai Verma, Mohan L Verma

Width Dependent Electronic and Transport Properties of Stanene Nanoribbon: Ab Initio Study ........................................... 1232
Swati Verma, Arun Kumar, Rahul Baghel, Jaspal Bagga, Shashank Kumar, Mohan L Verma

Over Current Numerical Relay Analysis for Protection of PV Generating System ................................................................. 1237
Shimpy Ralhan, Akshay Kumar Nayak

Author Index