

2024 4th International Conference on Computer, Communication, Control & Information Technology (C3IT 2024)

**Hooghly, India
28-29 September 2024**



**IEEE Catalog Number: CFP24C3T-POD
ISBN: 979-8-3503-8913-5**

**Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP24C3T-POD
ISBN (Print-On-Demand):	979-8-3503-8913-5
ISBN (Online):	979-8-3503-8912-8

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Online Retail Customer Segmentation Using RFM Quantiles and Clustering Technique.....	1
<i>Mouli Majilya, Giridhar Maji, Partha Ghosh, Soumya Sen</i>	
Potential Impact of Rainfall and Temperature on Tea Yield in North-East India	7
<i>Chiranjit Bhowmik, Paritosh Bhattacharya, Umesh Mishra, J K Mani</i>	
Nirnayaak: Revolutionizing Legal Research	12
<i>Soumyajit Datta, Arya Chakraborty, Saptarshi Bhattacharya, Amit Samui, Anurag Chakraborty, Kousik Dasgupta</i>	
Improved Localization Prediction Through Dataset Fuzzification and Hybrid FNN-RNN Model	17
<i>Adithya Krishna K, Swaroop S, Akhil K M, Sougandh Sunil</i>	
Malicious Social Bot Detection in Twitter: A Review	23
<i>Kanchan Bhale, Thirupurasundari D R</i>	
Empowering Inclusive Conversations: Harnessing MoViNets (Mobile Video Networks) for Indian Sign Language Translation	29
<i>Anika Chawla, Christy Biju, Sakshi Chougule, Pratiksha Deshmukh</i>	
Understanding Chickenpox Dynamics: CNN and Random Forest in Action	35
<i>Suraj Thakur, Deepak Banerjee, Deepak Upadhyay, Ramesh Singh Rawat</i>	
Towards Robust Real Image Denoising: Addressing Complex Noise Without Noise Modeling	41
<i>Akhilbaran Ghosh, Arjun Chouksey, Ritesh Mukherjee</i>	
A Transfer Learning Framework for Elderly Action Monitoring and Stillness Detection	49
<i>Aarya Khodke, Gauri Kulkarni, Shravani Junghare, Ashwini M. Deshpande</i>	
Virtual Zoo Using Unity Hub	55
<i>E Shanthini, S T Dharanya, H S Dhayanitha, S Durga</i>	
Recent Trends and Advancements in Hand Gesture Recognition from Real Time Video	61
<i>Shailaja Uke, Amol Zade, Nilesh J Uke</i>	
Price Prediction of Resale Vehicle Through Supervised Learning Approaches	70
<i>Ankit Paul, Chiranjit Guchait, Priyanath Bhukta</i>	
Realtime Gait Phase Prediction and Early Detection of Gait Abnormalities.....	74
<i>Chandni Jha, Shubham K. Jha, Oishila Bandyopadhyay, Dalia Nandi</i>	
Exploring the Mysterious World of Abiotic Rice Leaf Diseases Using Deep Learning	80
<i>Pritha Singha Roy, Vinay Kukreja</i>	
AI-Based Image Analysis for Early Disease Detection in Medical Imaging.....	85
<i>Pulkit Dwivedi, Nikita Rattan, Mansi Kajal</i>	
Automatic Speech Recognition for Sanskrit with Transfer Learning	91
<i>Bitit Sadhukhan, Swami Punyeshwarananda</i>	
An Efficient Approach to Improve Diagnostic Accuracy into Findings of Breast Cancerous Cells with SVM and Logistic Regression Models	96
<i>Indranil Maity, Siddhartha Bhattacharya, Suvojit Maity</i>	

Efficient Priority Assignment Scheme Based on Heuristic Methodology in Low-Rate DoS Affected IoT Network	102
<i>Supantha Das, Dilip Kumar Maity, Surajit Kumar Roy, Chandan Giri</i>	
Performance Evaluation of Application Layer IoT Protocols: MQTT and CoAP	108
<i>Manika Debnath, Subrata Modak, Dhrubasish Sarkar</i>	
Design and Implementation of IoT Based Cost Effective Classroom Appliances Control and Monitoring System	114
<i>Akash Routh, Mima Dhali, Adrika Baidya, Aniket Chowdhury, Ayush Paul, Tapas Tewary</i>	
Hi-Tech Head Gear Kit for Two Wheeler Safety	119
<i>Prasanna Zade, Sachin Khade, Prabhakar Dorge, Varun Dhenge, Anas Khan, Rutuj Dandnaik, Sanjay Dorle, Pranjali Jumle</i>	
Optimization of Waste Monitoring and Controlling Using Smart Bin	125
<i>Arijeet Kar, Aniruddha Upadhyay, Pradipta Chakraborty, Sk Sweta, Moupriya Sadukhan, Hiranmoy Mandal, Sirshendu Saha</i>	
Sustainable Smart Trash Bin Based Waste Segregation and Collection System	132
<i>Abhishek Singh, Aranya Banerjee, Samayita Chatterjee, Hriju Das, Nikita Das, Sirshendu Saha, Hiranmoy Mandal</i>	
Experimental Study on MQTT Protocol Based Home Automation System with Enhancement	138
<i>Subharghya Manna, Abhijit Banerjee</i>	
Assessing the Effectiveness of Anomaly Detection in IoT Data Streams with Machine Learning	143
<i>Subir Panja, Suman Das, Arindrajit Pal</i>	
A Machine Learning and Nature Inspired Algorithm Based Hybrid Approach for Detection of IoT Attacks.....	148
<i>Subinoy Sikdar, Malay Kule</i>	
Blockchain-Enabled Secure and Efficient Integration of IoT Devices: A Novel Approach for the Internet of Medical Things(IoMT)	154
<i>Kamalika Bhowal</i>	
BCredS: Blockchain Leveraged Secure System for Credential Management in Emergency Scenarios	163
<i>Nabanita Das, Subhashis Das</i>	
Optimizing Dynamic Source Routing Protocol Using Computational Intelligent Approach	169
<i>Kavita A. Kathane, Rushikesh M. Shete, Rahul Nawkhare, Lalit B. Damahe, Nitin N. Jadhav, Jiwan N. Dehankar</i>	
Decentralized Ledger Technologies: Exploring the Landscape and Diverse Applications of Blockchain.....	177
<i>Nandini Sharma, Medha Khenwar, Shobit Agrawal, Sonika</i>	
Role of Smali Opcodes in Identifying Android Malware Obfuscation Variants.....	181
<i>Abhishek Anand, Jyoti Prakash Singh</i>	
A Comprehensive Assessment on Fortified Security Protocols: Delving into AES Algorithm, ECC, Blockchain, Cloud Computing Within a Regulatory Landscape	187
<i>Biresh Kumar, Kritika Singh, Pallab Banerjee, Purushottam Kumar, Mohan Kumar Dehury, Pooja Jha</i>	

A Secure Mechanism for Password Hash Value Generator with the Security Analysis of Various Hashing Algorithms.....	193
<i>Akshat Sharma, Siddhant Thapliyal, Mohammad Wazid, Amit Kumar Mishra, Prince Kumar, Debasis Giri</i>	
Multiple Sensor Network (MSN) for Coal Mine Safety Monitoring with LoRa Module	199
<i>Soumyadeep Ghosh, Ayandip Saha, Nupur Chhaule</i>	
Optimization of Absorber Layer for the Performance Enhancement of Lead-Free MASnI ₃ Based Perovskite Solar Cell	203
<i>Subham Pramanik, Kanishka Majumder, N. R. Das</i>	
Determination of Percentage of Adulterants in Wheat Grains by Using Microwave Signal	208
<i>Prodyuti Sarkar, Rahul Mondal, Nilesh Mukherjee, Piyali Basak, Partha Pratim Sarkar</i>	
Study of a Modified Design of LVIT as Displacement Transducer with Extension of Linear Zone	213
<i>Hiranmoy Mandal, Sirshendu Saha, Tushar Kanti Bera, Satish Chandra Bera</i>	
Responsivity of Heterostructure In _x Ga _{1-x} N/GaN P-i-N Photodetector for Different Values of Active Layer Thickness and Mole Composition	220
<i>Moubani Bandyopadhyay, N. R. Das, Shampa Guin</i>	
Adaptive Sensor Fault Detecting Cyber-Physical Security System for Automated Carriers.....	224
<i>Projat Banerjee, Subhashis Das</i>	
Performance Enhancement of Lead-Free MASnI ₃ Based Perovskite Solar Cells Through Charge Transport Layer Optimization	231
<i>Subham Pramanik, Krishanu Bandyopadhyay, Kanishka Majumder, N. R. Das</i>	
Study of a Bourdon Tube-Hall Sensor Based Non-Contact Smart Pressure Transmitter	236
<i>Sirshendu Saha, Hiranmoy Mandal, Samrat Das, Satish Chandra Bera</i>	
An Efficient RT-MAC Protocol in Wireless Sensor Networks for Real Time Data Transmission	244
<i>Archana R Raut, Sunanda Khandait, Dipti Theng</i>	
Exploration of Text Classification Techniques in Natural Language Processing	250
<i>Swastisudha Punyatoya, Chittaranjan Pradhan, Abhaya Kumar Sahoo</i>	
Lw-ResSASE-Net: A Lightweight Attention-Based Residual Network for Covid-19 and Pneumonia Prediction Using Chest X-Ray	256
<i>Rajdeep Pal, Bristi Panda, Ankit Das, Saubhik Bandyopadhyay</i>	
Three-Class Severity Detection and Classification of Brain Tumor ROI Using YOLO-V9	261
<i>Garima Jain, Sanat Jain, Harshlata Vishwakarma, Jayanthi J, M. Anousouya Devi, Vijendra Singh Bramhe</i>	
A Deep Learning Framework with Attention Mechanism for Accurate Detection and Classification of Crop Pest Management	267
<i>Senthil Pandi S, Venkatesan S, Reshmy A K, Sathish Kumar Kannaiah</i>	
Enhancing Lung Cancer Prediction with EfficientNet and Stochastic Optimization	273
<i>Senthil Pandi S, Kalpana B, Thanga Ramya S, Sathish Kumar Kannaiah</i>	
OBDTL: Under Water Object Classification Using Transfer Learning	279
<i>Sarthak Roy, Partha Ghosh, Takaaki Goto, Mainak Sen</i>	

Vegetation Change Detection Through NDVI Analysis Using Landsat-8 Data	285
<i>Shreeya Desai, Mansha Mattoo, Ashwini M. Deshpande, Ananya Dey, Siddhi Akiwate</i>	
A Message Digest Based Secured APUF Model to Prevent Machine Learning Attacks.....	291
<i>Prasenjit Das, Chandan Giri</i>	
MRI Insights: Classification of Brain Tumor Using Intelligent Feature Extraction Techniques	297
<i>Simeet Nayan, Devanshu Chatterjee, Shreyash Patil, Mehboob Zahedi, Shyamalendu Kandar</i>	
Integration of Big Data and Business Analytics in Lean Manufacturing: A Strategic Approach	303
<i>Arasuraja Ganesan, P. Periasamy, R. Velanganni, S. Karunakaran</i>	
Genre-Based Movie Recommender System with XGBoost.....	309
<i>Suresh Kumar, Jyoti Prakash Singh, Shantanu</i>	
Advanced Fracture Analysis with Adam Optimization Techniques	315
<i>Subha P, Senthil Pandi S</i>	
South Asian Sounds: Audio Classification	320
<i>Rajdeep Chatterjee, Pappu Bishwas, Sudip Chakrabarty, Tathagata Bandyopadhyay</i>	
An Empirical Review of Dark Web Data Classification Methods Using NLP, SVM, CNN, and GAN	326
<i>Yogita H. Dhande, Amol Zade, Sonal P. Patil</i>	
Bitcoin Price Analysis and Prediction Using DMA and LSTM	334
<i>Gourab Ghosh, Megha Ghosh, Pinakpani Mukherjee</i>	
An Enhanced Approach on Temporal Graph Neural Networks for Human Activity Recognition	340
<i>Velantina V, V Manikandan, P Manikandan</i>	
Inter-Layer Recurrent Neural Networks Learning Algorithms.....	345
<i>Priyam Ganguly, Akhilbaran Ghosh</i>	
Attack Generation for Smart Grid Network Using GAN Simulator.....	351
<i>Subhashis Das, Arindrajit Pal, Subhasis Dasgupta</i>	
A Review of Techniques for Optimal Allocation of Distributed Generations in Distribution System	358
<i>Vikash Kumar, Matta Mani Sankar, Mukhlesur Rahman</i>	
Transient Performance Analysis of a DC Grid Interconnected Wind Turbine System	364
<i>Debasish Sur, Tapas Kumar Saha, Dola Sinha</i>	
Non-Isolated High Gain DC-DC Converter Interfacing Renewables and AC Grid	369
<i>Nikita Rade, Vinodini Bhole</i>	
Voltage and Frequency Mitigations for Solar PV-MiniMicro Hydel Power Plant in Hybrid Microgrid System.....	375
<i>Sanghamitra Manna, Mrinmay Kanjilal, Arindam Kumar Sil</i>	
Adaptive Quantum-Inspired Evolutionary Algorithm for Enhanced Load Frequency Control in Two-Area Power Systems	381
<i>Poulomi Ganguly, Sandipan Misra</i>	

Optimal Tuning of Transient Stability Constraint Optimal Power Flow Problems Using Novel Optimization Algorithm.....	387
<i>Sourav Paul, Sneha Sultana, Nirmalya Dey, Tahseen Mushtaq, Divya Bharati Prusty, Provas Kumar Roy</i>	
A Study of the Friction-Velocity Behavior of a Hydraulic Actuator at Low Velocities	394
<i>Suchibrata Datta, Sanjib Kundu, Sourav Kayal</i>	
Model Based Thermal Fault Diagnosis of Lithiumion Batteries Using Extended Kalman Filte	399
<i>Chandrani Sadhukhan, Rathindra Nath Biswas, Mrinal Kanti Naskar</i>	
Fuzzy Modelling and Grey Relation Analysis of Electric Discharge Machining Performed on Inconel 718 Superalloy	404
<i>Sovan Bhowmick, Gulshan Prajapati, Nisantika Biswas, Gautam Majumdar</i>	
Meanderline-Stub Based Human Body Implantable Antenna Design for Biomedical Applications	410
<i>Soham Ghosh, Bhaskar Gupta</i>	
Wound Classification: Database Construction Through Image Processing and Region of Interest Detection	414
<i>Trishaani Acharjee, Rajdeep Chatterjee</i>	
TARG: A Reference-Free, Lossless, Customized General-Purpose Encoder for Genome Sequence in Raw, FASTA, Or Multi-FASTA Formats.....	421
<i>Subhankar Roy, Partha Ghosh, Anirban Mukhopadhyay</i>	
Survivability Prediction from Multiomics Cancerous Data with 1DCNN-LSTM-Attention Mechanism	427
<i>Ambika Hazarika, Ansuman Kumar, Anindya Halder</i>	
Exploring Amino Acid Indices for the Classification of Parkinson's Proteins with the Aid of Deep Learning	432
<i>Bornali Baruah, Anindya Halder, Ansuman Kumar</i>	
Atrial Repolarization Wave Features for Enhanced Heart Rhythm Classification Using Extra-Trees Model	438
<i>Arya Bhardwaj, Bala Chakravarthy N., R. Pradeep Kumar, Kunal Pal, J. Sivaraman</i>	
Madelung's Disease Detection Using Wireless Communication Between Implanted Antenna and External Receiving Antenna	443
<i>Sanjana Chatterjee, Soham Ghosh, Bhaskar Gupta</i>	
Analysis and Identification of Leukemia Using YOLOv8	448
<i>Sulekha Kundu, Arpita Dutta, Krishna Kumar Jha</i>	
Bone Replacement Methodology Using 3D Printed Polymer Scaffold and Perforated Stainless Steel Tube: Manufacturing, Analysis and Experimentation	454
<i>Niloy Ghosh, Jhumpa De, Swarup Sarkar, Amit Roy Choudhury</i>	
Design and Analysis of Low-Noise Instrumentation Amplifier for Biomedical Signal Acquisition Systems.....	462
<i>Sunil Kumar Choudhary, Tushar Kanti Bera</i>	
Design and Analysis of Meander Line 5G Antenna Using Transmission Line Model (TLM)	468
<i>Soham Ghosh, Kanishka Majumder</i>	

Automatic Modulation Classification Using Convolutional Neural Network with Batch Normalization: A Novel Approach	473
<i>Pritam Sadhukhan, Jaydeb Bhaumik</i>	
Phase-Locking Dynamics of a Single-Loop Optoelectronic Oscillator with Phase Perturbation	477
<i>Jayjeet Sarkar, Abhijit Banerjee, Nikhil Ranjan Das</i>	
High Gain Broadband Antenna for X Band Wireless Communication Application	484
<i>Smarajit Maity, Tapas Tewary, Sunandan Bhunia</i>	
Design and Analysis of Flipped-P Shaped Elliptical Microstrip Patch Antenna Based on Different Dielectric Substrates at Sub-6 GHz Frequency Range for 5G Applications.....	489
<i>Razeen Aman, Sayantika Biswas, Jayantika Deb, Rahul Basu, Nupur Chhaule</i>	
Design and Development of Compact Broadband Microstrip Patch Antenna for 5G Communication.....	495
<i>Tapas Tewary, Smarajit Maity, Rakhi Neogi, Nupur Chhaule, Basab Chatterjee, Jayanta Digar, Sunandan Bhunia</i>	
Impact of Component Crosstalk on Power Penalty of a WDM Receiver in QPSK Multiuser Optical Network.....	500
<i>Pinakpani Mukherjee, Diptadip Chakraborty, Santu Sarkar</i>	
On the Behaviour of Cascaded Injection-Locked Optoelectronic Oscillator (CIL-OEO)	505
<i>Gefeson Mendes Pacheco, Jognes Panasiewicz, Abhijit Banerjee</i>	
An Empirical Study of Machine Learning Techniques for ODI Bowler Performance Evaluation	509
<i>Biswaranjan Das, Nayan Ranjan Das, Bappaditya Mondal, Ratul Sur, Sushmita Paul, Basudha Das, Sutanu Maity</i>	
Survey Paper on Various Techniques of Drug Discovery by Graph Neural Networks.....	515
<i>Rounak Saha, Trishita Maity, Akanksha Singh, Gracy Kumari, Arnab Chakraborty</i>	
Securing Comparative Study of Leaf Disease Identification with Different Deep Learning Models Using Hyperledger Fabric	521
<i>Subhashis Das, Soumendu Banerjee, Projat Banerjee, Nabanita Das</i>	
DALR: A Dynamically Adjustable Linear Regression Model for Handling Stream Data.....	527
<i>Rishita Mondal, Sourab Mandal, Paramartha Dutta, Arindrajit Pal</i>	
A Data-Driven Machine Learning Approach for Human Gender Classification Using Explainable AI.....	533
<i>Shakib Mahmud Dipto, Adria Binte Habib, Nadia Tasnim Mim, Salman Ibne Eunus, Nabiha Tasnim Orchi</i>	
Modeling of Residual U-Net for Retinal Vessel Segmentation for Eye-Related Disease Detection	538
<i>Satyaki Ghosh, Sanjana Chatterjee, Soham Ghosh</i>	
Investigation on Effective Machine Learning Techniques for Sentiment Analysis	543
<i>Ayanika Majumdar, Joy Chakraborty, Sanchita Saha, Subir Panja, Priyanka Bhattacharya</i>	
Exploring the Benefits of Ensemble Techniques Involving MiDaS and MonoDepth2 Models for Monocular Depth Estimation.....	551
<i>Debdeep Mitra, Sambit Mallick, Snigdha Paul, Amlan Chakrabarti, Dola Gupta</i>	
Matri Seva: A Telemedicine Software for Rural Healthcare Program of RKMHOS, Varanasi	557
<i>Surajit Kundu, Soumyajit Das, Jayanta Mukhopadhyay, Swami Divyasukhananda</i>	

Author Index