

2025 Fourth International Conference on Smart Technologies, Communication and Robotics (STCR 2025)

**Sathyamangalam, India
9-10 May 2025**

Pages 1-510



**IEEE Catalog Number: CFP25Z25-POD
ISBN: 979-8-3503-5754-7**

**Copyright © 2025 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:	CFP25Z25-POD
ISBN (Print-On-Demand):	979-8-3503-5754-7
ISBN (Online):	979-8-3503-5753-0

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

S.No	Paper ID	Title & Author Name	Page No
1	0098	Integrating Explainability into RNNs for Amyotrophic Lateral Sclerosis Diagnosis <i>Balajee Maram, Rohan Raj Maram</i>	01
2	0100	Particle Swarm Optimization based Explainable Deep Learning Models for Celiac Disease Prediction <i>Balajee Maram, Rohan Raj Maram</i>	09
3	0126	Explainable AI in Stroke Treatment and Rehabilitation Monitoring: A Review <i>Radhika J M, Ajayan J, Sandip Bhattacharya, Sreejith S</i>	17
4	0166	Deep Learning-Driven Smart Signal Systems for Advanced Image and Video Processing in Urban Infrastructure <i>K S Bharaty, Praveen SR Konduri</i>	21
5	0238	Augmented Reality Based Therapy App for Children with Autism Spectrum Disorder <i>J John Shiny, H Ashish Thippu, K Sudharsandev, N Aaron Sam Jordan</i>	27
6	0251	Deep Learning Approaches for High-Frequency Bitcoin Trading and Market Price Prediction <i>G Lakshmi Durga, A Dhana Lakshmi, S Pavitra, T T N Thanuja, P Leelavathi</i>	33
7	0281	Advancing Eye Disease and Glaucoma Diagnosis: A Comprehensive Survey of Deep Learning, Machine Learning and Hybrid Approaches <i>B Venkata Suresh Reddy, Bhanu Prakash Battula</i>	39
8	0289	Sequential ResNet Framework for Lung Cancer Classification: A Comparative Analysis of Bottom-Up and Top-Down Approaches <i>Karthikeyan Shanmugam, Harikumar Rajaguru</i>	50
9	0295	Autism Spectrum Disorder Detection Based on Optimal Feature Selection Technique <i>Lakshay Kaushik, Ranjit Singh, Manjit Singh</i>	56
10	0301	Advanced Multimodal Deep Learning for Predicting Cognitive Decline in Alzheimer's Disease <i>M Sirish Kumar, Gangineni Charmi, Yeragadindla Chandana, Dasari Venkata Jaiyesh, Mallela Hari Kartheek</i>	62
11	0310	ECNN-TDP: A Novel Convolutional Neural Network Model for Improved Thyroid Disease Classification <i>V Sasikala, Ch Asritha, M Tanmayi Vardhini, V Tulasi, J Vyshnavi</i>	68
12	0344	IoT-Based Smart Traffic Monitoring and Control System for Urban Areas <i>Aditya Rastogi, Sandeep Kumar, Ananya Aggarwal, Peehu Khandelwal, Paras Khola, Nirbhay</i>	74
13	0393	Deep Learning-Powered Fall Detection and Behavior Monitoring Using Computer Vision <i>Niteesha Sharma, K Sudheer Reddy, Ramesh Babu Pittala, M Deekshith Reddy, J Anugna Sri, B Mahathi</i>	80

14	0425	Applying Machine Learning to Economic Analysis: Predicting Bank Failures in India using Decision Tree Models <i>Sadiya Firdose RZ, Laxmana Rao Goranta</i>	86
15	0433	Enhancing Skin Disease Classification Through GAN Generate Synthetic Images for Improved CNN Training and Generalization <i>R V Jayanth, R Radhika, T Abhiram, T Neha, G Charan</i>	92
16	0435	Utilizing Machine Learning Techniques for Predictive Modeling and Early Detection of Chronic Diseases <i>Gayathri R, Perarasi T, Leeban Moses M, Sukant C</i>	100
17	0489	Deep Learning-Based Ensemble Model for Automated Severity Assessment of Osteoarthritis from Medical Images <i>Jaswanth Sai Podugu, Venu kondragunta, Pranav Parshuram Bhavirisetty, V B K L Aruna</i>	106
18	0512	Hybrid Deep Learning Framework for Emotion Classification of BCI Data using Autoencoder-Based Feature Extraction and Stacked Ensemble Learning <i>Sannasi Chakravarthy S R, Harikumar Rajaguru</i>	113
19	0533	An Experimental Analysis of Brain Tumor Detection using Contemporize CNN Models <i>Girinath N, Dinesh Kumar J R, Ganesh Babu C, Praaveen Hari G S, Sanjay S, Sathiyendran S, Sanjana S</i>	117
20	0537	Real-Time Stress Detection System with Integrated Facial Expression Analysis based Hybrid Neural Network <i>Ganesh Babu C, Dinesh kumar J R, Dinesh Kumar K V, Balaji V R, Hariharan R, Gowtham S</i>	123
21	0557	IoT and WSN-Driven Solid Waste Image Classification in Smart Cities using the Attention BiGRU Model <i>Anandbabu Gopatoti, Punit Kumar Chaubey, Piyush Charan, Mathivanan K, T Prabakaran, A Saran Kumar</i>	129
22	0661	Performance Analysis of Classifiers for Liver Cirrhosis Detection using Fast Hadamard-EHO Transform Features <i>R Karthikamani, Harikumar Rajaguru, R Sathish Kumar, M Kalaiyarasi</i>	135
23	0662	Driver Drowsiness Alert System using Machine Learning and Autonomous Car Parking <i>B Chandra, Teena S, Srivatsan V</i>	140
24	0694	Improving Healthcare through the Internet of Health Things (IoHT): Continuous Monitoring of Patients, Data Analytics and Interconnected Medical Equipment <i>V Saravanan, M Prakash, V Samuthira Pandi, M Kavitha, Shameem S, Tephillah S</i>	146
25	0696	Leveraging Augmented and Virtual Reality in Conjunction with Artificial Intelligence, 5G, and Edge Computing to Transform Immersive Experiences <i>G Palanikumar, V Samuthira Pandi, S Banumathi, G Karthikeyan, Jayant Giri, Maram Y Al-Safarini</i>	152
26	0743	Classification of Diseases in Mango Leaves based on Deep	158

		Learning using CNN model <i>Mohanapriya S, Mohana Saranya S, Dinesh K, Niganth S, Nithil Prasath K, Saranraj S</i>	
27	0747	A Sustainable Methodology to Energy Administration and Cost Reduction approach <i>S Merciline Shekkina, K Karthik Kumar, G Shiva Ram, M Sameeha, G Karan, T Sujibala</i>	163
28	0779	Analysis of Electrical Power System (EPS) DC- DC converter Topologies for Efficient CubeSat Load Management <i>Rajalakshmi A, Priyadharshini V, V Chamundeeswari</i>	169
29	0805	Data-Driven Insights in to Diabetes Risk Factors and Patient Care Optimization using Machine Learning Algorithms <i>M Dheikshanya, S Chidambaram, K G Srinivasagan</i>	180
30	0815	Detection and Classification of Faults in a Power System with Inverter Penetration Based on a Real Time Machine Learning Application <i>R Geetha, P Thilagavathi, Jose Anand A, Anitha Govindaram, Jerril Gilda S, D Parameswari</i>	185
31	0831	Drug Recommendation System and Side Effects based on Sentiment Analysis of Drug Reviews using Machine Learning <i>V Lakshman Narayana, K Sai Nikitha, S K FathimaYaseen, P Madhu latha, T G Sahithi</i>	191
32	0841	Revolutionizing Cancer Detection Diagonalizing with Texture Features using the TexDiagNet Model <i>Vinod Kumar R, Mohamed Shakeel S, Priyadharshini S</i>	197
33	0902	Deep Learning-Based Approaches for Efficient Brain MRI Segmentation: A Comprehensive Analysis <i>Aman Kumar Bhamboo, Shrey Pandey, Jayanti J, Arun Kumar K</i>	204
34	0915	Predictive Plant Irrigation Management System using Machine Learning <i>Prasannahariveeresh Jeyaveerapandian Raji, Anu Chalil</i>	212
35	0922	AUTOAID: An Intelligent Accident Notifier <i>Nikita Jha, Premprakash Motwani, Amit Jaiswal, Harsh Sharma</i>	218
36	0933	Innovative Metasurface-Assisted Star-Coupled Microstrip Antenna Array for Next-Generation Wireless Systems <i>A SakthiPreetha, K Kavitha, Aswathy Pradha Devi H, Panuval Gnana Boomika J, K Karthika, R Gowri Manohari</i>	224
37	0947	Time Series Analysis and Forecasting of Vehicular Network Communication Severity: A Comparative Study of ARIMA and SARIMA Models <i>Shivangni Jat, Ranjeet Singh Tomar, Santosh Narayankhedkar</i>	228
38	0956	The Role of THz Technology in Enhancing Cellular Mobile Based FANET for UAVs in 6G <i>Vengatesan R, D Denceli, R Mohandas, Kirubasankar K</i>	236

39	0974	AI Framework for Fruit Quality Assessment: Integrating CNN-Based Spoilage Detection, Price Estimation, and LLM-Powered Insights <i>Karen Joseph, M Roshni Thanka</i>	241
40	0976	Stacking-Based Machine Learning Approach for Anomaly Detection in Embedded System Network Traffic <i>Nabanita Roy, Raj Gaurang Tiwari, Sangita Roy</i>	247
41	0988	Efficient Data Replication Management in the Cloud using a Hybrid Meta Heuristics Optimization Model <i>K Vijay Kumar, S Dhanasekaran, V Vasudevan</i>	253
42	0999	CredShield: Decentralized AI for Secure and Adaptive Credit Risk Management <i>Himanshu Yadav, Paras Jain, Lakshmi D, AVR Mayuri</i>	259
43	1015	Down Syndrome Detection and Classification using ANFIS Classification Approach <i>V Gokulakrishnan, S Selvakumar</i>	264
44	1085	Lung Cancer Detection in Histopathological Images using Lion Optimization Algorithm and Machine Learning Classifiers <i>Karthikeyan Shanmugam, Harikumar Rajaguru</i>	270
45	1094	DDoS Attack Classification using Adaptive Multiphase ensemble with Temporal Reinforcement <i>Shaik Reheman, Shaik Humaid, Shaik Aadil, P Rajesh</i>	276
46	1098	AgroInsight Pro: Sustainable Agriculture Analytics & Decision Support System using GEN-AI <i>CH Sai Krishna, S Pavan Sai, P Dinesh Roy, V Sathya</i>	281
47	1100	Optimizing Chronic Kidney Disease Prediction Through Advanced Data Imputation and Clustering <i>Abha Singh, Rajan Kakkar</i>	286
48	1109	Blockchain-Enhanced Zero-Trust Architecture for Secure Key Management in Wireless Sensor Networks <i>V Sujatha, Ashly P Joy, Naveen Kumar R, Preethi R, Rashmika R</i>	293
49	1111	Power Efficient GSM-HMPAPM for Visible Light Communications <i>R Pandimeena, Varunraaj S M, Prithvi K M, Vinoth D, Vignesh Kumar S</i>	299
50	1113	Hybrid CNN-Transformer Model with Attention-Based Decoding for Accurate Abdominal Organ Segmentation in Medical Imaging <i>N Lakshmi, Shobana S, Suriyaprakash M, Joshna K, Ramya Sree P</i>	304
51	1120	Power-Efficient Design of Full Adder using XOR-XNOR Logic and Input-Controlled Leakage Restrainer Transistors in 14nm CMOS Technology <i>R Pandimeena, Vinoth D, Vignesh Kumar S, Varunraaj S M, Prithvi K M</i>	310
52	1137	Harnessing Deep Learning Models in Fundus Imaging for Early Diagnosis in Eye Disorders <i>E Priya, M Dhinesh, G Rohitkumar, M Dheena</i>	318

53	1204	Self-Supervised Learning with Variational Autoencoders for Anomaly Detection in Autonomous Drone Fleets <i>Kirubhakaran M, M Manochitra, Gowtham T, D Agila Akshya J, M Sundarrajan, Mani Deepak Choudhry</i>	323
54	1207	Twin-Layer Deep Learning Model with IoT Integration for Intelligent Pest Detection in Smart Farming <i>R Sankar, M Anubala, M Hemalatha</i>	329
55	1209	A Novel CNN based Classification of Anterior Talofibular Ligament in T2 Axial Magnetic Resonance Imaging Scans <i>Hammikolla Akshaya, Munukutla Venkata Krishna Vihar, Mandyam Sai Bhavesh, V Mohan, B K Madhavi</i>	335
56	1221	Design, Modeling and Comparative Analysis of SRAM Performance and Functionality under the Subthreshold Regime for Various Technologies <i>T Vasudeva Reddy, Ravikiranreddy Kandadi, Raja Suresh, G A Arunkumar, Sivanagi Reddy Kalli, Srikar D</i>	340
57	1224	Design and modelling of Perovskite based Solar Cells and Photodetector with the Hybrid Heterostructure of SnO ₂ /CH ₃ NH ₃ PbI ₃ /NiO Thin films <i>Mallina Venkata Sanjana, Kosuru Prasanna, Kosuru Prasannar, Rai Raviteja, Palepu Ashok</i>	346
58	1232	Design and Analysis of a Convection-based Diffusion Model Biosensor for Measuring Water Contamination in Micro Scale Devices <i>T Vasudeva Reddy, Kellampalli Ramesh babu, T Hymavathi, Srikar D, SivanagiReddy Kalli, Raja Suresh</i>	353
59	1234	Dynamic Music Composition System using LSTM and Transformer Networks <i>N Krishnaveni, Kotha Vinay, Garnipudi Srenik</i>	359
60	1274	Application of Advanced Data Mining and Computer Vision Techniques in License Plate Recognition <i>Ayorinde Alase, Danish Multani, Sai Rithwik Amajala, Udhaya S K, Kamal Upreti</i>	365
61	1275	Enhancing Low-Power VLSI Design through AI-Based Simulation and Optimization <i>Sheela Hundekari, Onyekachi Kelvin Onumajuru, Danish Multani, Olutoye Timothy Oluwakemi, Kamal Upreti</i>	371
62	1282	Smart IoT based Monitoring System for Autism Patients <i>Nataraj B, Prabha K R, Saranya S M, Srilegaa S, Sumiya K</i>	377
63	1283	AI-Enhanced Wearable for Remote Healthcare Monitoring to Manage Stress <i>Nataraj B, Prabha K R, Idhaya Bharathi S, Jeynth A, Monish Kumar R</i>	382
64	1290	Design and Comparison of Hybrid Optimization Controllers for Artificial Respiration System <i>Sakthiya Ram S, Madhumitha J, Arunjayakar S, Deepa P, Kalimuthu M, Kumar C</i>	387
65	1292	Development and Evaluation of Virtual Emotional Support Platforms: Approaches and Technologies	392

		<i>Snehitha, Naveen Velugyu, Harpreet Kaur, Rafi Mohammad, Tirumalasetti Naga Sharvani</i>	
66	1300	Optimized QCA SRAM for Efficient MAC Operations in AI Workloads <i>Harini D, Vaishnavi R, Rohini G</i>	398
67	1315	Decision Support System for Crop Planning and Agricultural Health using Machine and Deep Learning Methods <i>Kalpana Murgan, T Praneeth, K Abhi Ram, P Jothendra Sai, L Raja Sekhar Reddy</i>	404
68	1318	Enhancing Safety Prediction in Accident-prone Zones using Gradient Boosting Machines <i>N Prakash, S Ashwin, A Yoganathan, P Kalyanasundaram, P Anitha, R Geetha</i>	410
69	1324	Intelligent Crop Yield Prediction using IoT and Optimized Deep Learning for Precision Agriculture <i>N Juliet, Sudharshan G, Varalakshmi G, Mohamed Roshan Akthar M, Dhananchezhiyan K</i>	414
70	1332	Dynamic AI Tissue Analysis for Enhanced Medical Diagnosis using TSDM <i>J K Kanimozhi, J Jtlin Marya, C A Kandasamy, N Prakash, A Yoganathan, M Venkatesan</i>	420
71	1377	Edge-enhanced YOLOv8 for Adaptive Real-time Pothole Detection in Smart Road Network <i>Sandhya Devi R S, Jeni Santina A, Swathi S, Tamilselvan S K</i>	425
72	1378	Real-Time Pest Detection System Using Efficientnet Deployed On Raspberry Pi for Precision Agriculture <i>R S Sandhya Devi, E Cowshik, G L Vishnu, P C Rakshan Kaarthy</i>	431
73	1422	Optimized Dynamic Comparator Design for Enhanced Speed and Power Efficiency <i>T Santosh, G Swathi, J Likitha, B Poojitha, B Madhuri</i>	437
74	1432	Deepfake MRI Detection: A ViViT-Based Landmark Feature Extraction Approach for Brain Tumor Scans <i>V N Manju, Lenish Pramiee</i>	442
75	1436	Optimizing Electric Vehicle Integration with Renewable Energy through Advanced Energy Management Systems <i>Kavinkumar S, Praveen V, Nirmala R G</i>	448
76	1454	EMG Signal Analysis using Improved WignerVille Distribution Model and Long Short- Term Memory for Amyotrophic Lateral Sclerosis Prediction <i>D Deepa, S Caroline Vinneta, Thangavel, R Pragadeesh</i>	454
77	1459	MOODPLUS - Personalized Mental Health Recommendation Software Solution <i>Tamilselvan S, Saravana Kumar R, Anitha E, Arulmurugan L, Agnes R</i>	458

78	1475	Deep Learning for Satellite Image Classification: A Comparative Analysis of CNN and ResNet-18 <i>Carmel Mary Belinda M J, Kannan E, Alex David S, Poongavanam N, Anstey Vathani T, Manimaran A</i>	464
79	1489	Channel Characterization of Ultra Massive MIMO Systems Utilizing Millimeter Waves for 6G Vehicular Communication <i>D.Murugesan, S.Emalda Roslin</i>	469
80	1508	Empowering Food Safety with Blockchain: A new Era of Organic Food Supply Chain Management <i>Ch Upendar Rao, B Sadhana, B Ashwitha, B Sathish Reddy, M Sahith Kumar</i>	475
81	1509	Intelligent Battery Management System using Machine Learning with Dual Axis Solar Tracking System <i>Shubham A Kale, Shubhangi S Patil</i>	480
82	1511	Enhancing Cybersecurity with Machine Learning to Strengthen Defenses Against Phishing Threats <i>Boya Leela Mahesh, Sandeep Kaur</i>	485
83	1512	Ensemble Transfer Learning Coupled Osprey Optimization Algorithm for Feature Selection from Skin Cancer Image Datasets <i>Bibhuprasad Sahu, Sanjay Kumar Sen, Amrutanshu Panigrahi, Abhilash Pati, Ghanashyam Sahoo, JVR Ravindra</i>	493
84	1523	Optimized ANN-GA Model for Predicting the Compressive Strength of High-Performance Concrete <i>Ishana M, Leherijah S, K Vijai, Sivaranjani D, Jessica Preethi B</i>	499
85	1536	Implementation of a Cost-Effective Smart Grid Based on a Web of Things to Access Multiple Energy Sources Remotely <i>Prakash M, Pravin J, Elanthirayan R</i>	505
86	1538	Automated Detection of Acute Appendicitis from Contrast-enhanced CT Scans using Generative Adversarial Networks for Augmented Classification in Acute Abdomen Cases <i>J R Marshal Done, J Srija, J Jerlin Rajan</i>	511
87	1549	FlexAssist: A Sensor-based Glove for Hand Function Assessment using MAS and QUEST <i>Virupaxappa G, Aditya Elango, Parikshith Sivakumar, Puvvada Charan Sai, Thangam S</i>	520
88	1555	Enhancing Single-Channel Speech Processing with Advanced Noise- Reduction Techniques <i>Deepa D, Caroline Vinneta S, Thangavel, Shreyaa V</i>	527
89	1556	Implementation Of Humanoid Robot Using Arduino Mega <i>Likitha G, Shivapanchakshari T G, Moulya Reddy N R, Manasa A, Meghana A, Sudha M S</i>	531
90	1569	Design and Development of Hand Exoskeleton for Elbow Rehabilitation using IMU Sensors <i>Vishnu N, Somasundaram Srinivasan, Tinkeswari P, Praveen Kumar K, Poonguzhali S</i>	537

91	1572	Enhanced Edge Detection and Segmentation Framework with Modified Yen's Thresholding for Parkinson Disease Diagnosis <i>P Divyabarathi, T Kumaresan</i>	542
92	1577	Random Forest and Deep Learning Hybrid Model for Analyzing Steel Lattice Strength and Durability <i>Madhusudhanan S, Vashistar M S, K Vijai, Serlin Jackson, Ajith A, Sam Dickson W</i>	551
93	1579	Sonar-Based Rock and Mine Detection for Enhancing Efficiency in Underwater Exploration and Security <i>S Maheswari, V Dhilip Kumar, R Tejashree, V Kiran, Ratna Kowshik</i>	557
94	1584	Soundscape Identification of Endangered Bird Species using Bidirectional Long Short Term Memory <i>Ramachandran Vijayarani, Sivaranganadane Sneha, Prabakaran Kavipriya</i>	563
95	1593	Evaluating the Impact of Gradient Boosting and Random Forest on Accuracy Improvement in Cardiovascular Risk Prediction <i>E Loganathan, M Naveenkumar, J K Kanimozhi, N Prakash, M Venkatesan, A Yoganathan</i>	569
96	1604	4x2 Microstrip Patch Array Antenna for 5G MidB and Wireless Networks <i>Nataraj B, Prabha K R, Praneet S, Pradeesh M, Pooakhilesan R</i>	574
97	1619	FPGA-Based Automatic Plant Watering System: A Real-Time Implementation and Verification using Xilinx <i>Subbulakshmi A, Sandhiya M, Silambarasi Palanivel, Lakshmi Kanthan Narayanan</i>	580
98	1642	Design of Modified Bacterial Foraging Algorithm (MBFA) FIR Filter for Signal Processing Applications <i>Nandhini R N, Venkat A K, Prasanna Kumar S</i>	586
99	1657	Hybrid TransUNet and Attention U-Net for AI-Based Colonoscopy Polyp Detection <i>Anvin Shaiju, Nirmal Varghese Babu</i>	592
100	1659	High-Performance Optical OFDM System with Single Photon Pulsed Laser and Advanced <i>S Krithiga, Sushana Grace Manoj, Shweta Sharma</i>	597
101	1660	Automated Esophageal Cancer Detection using Convolutional Neural Networks for Early Diagnosis <i>Lathika Arun, Smitha John</i>	604
102	1675	Exploring Blood Biomarkers for early detection of Knee Osteoarthritis using Machine Learning Model with Focus on Adult Patients <i>G Janaki, D Umanandhini</i>	611

103	1677	Effective Task Scheduling based on Candidate Optimization Algorithm (COA) in Heterogeneous NoC-Based MPSoC <i>Sathis Kumar K, Janani T, Karpagavadivu K, Raihana A, Meenalochini M</i>	617
104	1682	Multimodal Question Answering with DenseNet and BERT for Improved User Interaction <i>Battula Bhavana, Chennu Chaitanya, Bharathi Mohan G</i>	625
105	1703	Inferred Lattice Recursive Least Squares Filter with DCT-Hadamard Pre-Processing Technique for Speech Enhancement in Digital Hearing Aid <i>D Deepa, P Thangavel, M Leeban Moses, C Poongodi, T Perarasi, K Shoukath Ali</i>	632
106	1714	A Software-Defined Zero Trust Framework for Secure Access Control and Micro Segmentation using SDN and SDP <i>S Harshavardini, A Bertia</i>	638
107	1716	A Review on: Machine Learning Algorithm to Detect Parkinson's Disease Early <i>Disha P S, Shekhar R</i>	645
108	1728	Face Restoration of Ancient Indian Statues using Image Inpainting <i>Ashlin Deepa R N, B Sankara Babu, Reddishetti Danish, P Pavan Kumar Reddy, Gubba Venkata Sai Nitin, Sai Rohith Pinjala</i>	651
109	1739	Design of a Versatile CMOS Synchronous Counter with Advanced Gating Techniques for Energy-Efficient Systems <i>G Lakshmana, M Sri Pujitha, R Bala mani, G Sarayu, K S V Pranahitha</i>	657
110	1755	Pap Smear Image Segmentation and Classification Methods for Cervical Cancer Detection using Machine Learning <i>Ajaypradeep Natarajsivam, Neelapareddigari Praneetha, Rani V, Maddila PraveenKumar, Bhukya Rahul Naik</i>	661
111	1771	Implementing Feature Extraction and GA based Feature Selection for Fingerprint-Iris and Fingerprint-Face <i>Vairavel K S, Vaishak N, Indharajith G, Balamurugan R, Vaishnavi M</i>	667
112	1772	Hybrid Predictive Framework for Expiry Date Estimation of Live-Attenuated Vaccines using Stability Testing and Machine Learning <i>Gokul Krishna Lankipalle, Shubham Kumar Singh, Rishi Raj Mallik Tadiboina, Venkata Ram Vardhan Osey, Uma Jothi</i>	671
113	1790	Residue Number System Enveloped Configurable Hardware Mutual Authentication Protocol <i>Elango S, Sampath P, Raja Sekar S, Gavaskar K</i>	678
114	1793	Mechatronics Journey and Project Management of Arthropod Robots Design and Development <i>Jose Cornejo</i>	684

115	1835	High-efficiency CNTFET - based Inverter and Pass Transistor Design for Hamming Code Encoder and Decoder for Fault-Tolerant Data Transmission <i>Panyam Lokesh, M Mahesh Kumar, S Rambabu</i>	690
116	1837	Impact of Spatial Context on Characterization of Activities of Daily Living Using sEMG Signals <i>Venkata Jahnavika Reddy, Anish Chand Turlapaty</i>	696
117	1838	Hybrid FrFT-HS Framework for High-Accuracy Lung Cancer Classification from Gene Expression Data <i>Karthika M S, Harikumar R, Ajin R Nair</i>	703
118	1851	Low power CMOS Folded Electro Cascode Amplifier Design for Electrocardiogram Applications <i>Rangeetha S, Ganesh Babu C, Bavana K B, Devadharshini M, Dharanya C</i>	709
119	1861	Enhancing Glacial Lake Monitoring Through CNN-Based UNet Models in a Streamlit Application <i>Abinesh C, Priyadharsini C</i>	715
120	1876	Automated Emergency Response System using AI-Driven Patient Monitoring, Surveillance and Drug Delivery <i>Kavin R, Aarruran S, Aravindhan T, Athi Kesavan K, Kousik Kumar V G</i>	721
121	1879	Antipodal Antenna for Smart Vehicular applications <i>T Perarasi, R Gayathri, K Shoukath Ali, C Poongodi, M Leeban Moses</i>	727
122	1883	A Lightweight Customized Convolutional Neural Network based Cardiac Health Detection <i>Baranidharan B, Aman Jha, Srishti Priya</i>	732
123	1894	Blockchain-Based Smart Electricity Monitoring and Sustainable Grid System with Machine Learning-Powered Electricity Demand Forecasting <i>Vupalapate Divya, Sravya Mukkara, Jaswanth Godavarthi, SV Sai Satya</i>	739
124	1896	Improving Software Quality in Software Development using Random Forest Approach <i>Remya Rachel Joseph, Philip Samuel</i>	745
125	1901	Artificial Neural Network Based model for Single Event Upset Current Prediction in 14 nm FinFET <i>Teena Choudhary, Lava Bhargava</i>	751
126	1906	Performance Evaluation of Classification Models for Respiratory Disease Detection Using WienerVille Distribution Features <i>Kalaiyarasi M, Harikumar Rajaguru, Saravanan R, Karthikamani R</i>	758
127	1907	Performance Analysis of Near Field XL-MIMO System using SWOMP Channel Estimation for Uniform Linear Array Antennas <i>Poongodi C, Perarasi T, Shoukath Ali K, Deepa D, Muthumanickam D</i>	763

128	1909	Vertical Spatial Prediction of Soil Salinity and Management Zoning using for Perambalur District of Tamil Nadu, India <i>Muthumanickam, D, Kumaraperumal R, Nivas Raj Moorthi, Poongodi C</i>	768
129	1922	Performance Assessment of Machine Learning Classifiers for Detecting Heart Rate Variations from PPG Signals <i>Kalaiyarasi M, Harikumar Rajaguru, Saravanan R</i>	773
130	1931	Bio Cognitive Mesh: Harnessing Swarm Intelligence for Self-Organizing AI at the Network Edge <i>Shubham Gupta</i>	779
131	1932	Delay and Power Optimization in 8-Bit ALU Using Reversible Logic <i>Uppari Sathwik, Somishetty Bhanu Teja, Bhalke Pooja, Kiran Mannem, Manchalla O V P Kumar, S Ravi Chand</i>	785
132	1948	Enhancing Machine Learning Classifiers for Prostate Cancer Detection through Feature Selection <i>Dharanidharan S, Mohammed Bathrul Muzzammil A M, Moaid Amir, Dinesh Chellappan, Harikumar Rajaguru</i>	791
133	1952	A Hybrid Machine Learning and Deep Learning Model for Time-Series Groundwater Level Prediction <i>Abhishek Tiwari, Himanshu</i>	797
134	1956	A DWT-Based Model with CNN-based Decision Fusion Strategy for Medical Image Encryption Scheme for Healthcare Network <i>Rankumar, Osama Jamal Jamil Abed Al Jawad, J Lefty Joyson, P Nancy, Navdeep Singh, Rowsonara Begum</i>	803
135	1959	Comparative Evaluation of AI Algorithms for Real Time IoT based Plant Assessment <i>M Jagadeeswari, K Sudharsana, J Surya Swaminathan, R Wesley Kishore</i>	809
136	1960	Hybrid Multimodal AI Framework for Real-Time Employee Activity Recognition and Workplace Motion Analytics <i>Arun Kumar C, A Kethsy Prabavathy</i>	819
137	1963	Broken Stick Regressive Convolution Neural Learning Based Blood Group Detection with Fingerprint Images <i>Swetha R, Zahira Jahan N</i>	827
138	1967	Machine Learning-Driven Early Detection and Monitoring of Respiratory Disorder using PCO ₂ Analysis <i>Mohamed Afsal J, Dhamodharan B, Hariharan C, Dinesh Chellappan, Harikumar Rajaguru</i>	832
139	1971	An Adaptive LoRa based Forklift Tracking and Collision Avoidance System for Smart Warehouses <i>Gurumoorthy K B, Karthikeyan A, Jeromesurya T, Sunmathi J S</i>	838

140	1974	Hybrid Quantum-Classical Phase Optimization in PMS Beamforming <i>Karthiga M, Deepa D, C Suganthi Evangeline</i>	846
141	1984	Advancing Smart Farming with UAV-Based Deep Learning for Proactive Wheat Disease Management <i>Rohan Thakur, Ronald Ekka, Yash Kumar, Poornima Mittal</i>	852
142	1993	Design and Simulation of an Efficient Memristor based Full Subtractor using Hybrid logic <i>K Paramasivam, R Nithya, Jana Priya S S, Sanjay S, Kavin Prasanth S</i>	857
143	1995	A Deep Learning Application to Detect and Diagnose Metabolic Encephalopathy <i>Anjali R, Ganesh Babu C, Nagarajan N</i>	863
144	1997	Tow-Thomas-Controlled Single-Phase Solar Powered Microgrids: Performance Evaluation in Grid-Tied and Standalone Operations <i>Madhur Agarwal, Neeraj Bhardwaj, Moksh Bashista, Ankita Arora, Shatakshi</i>	870
145	2026	AI-Driven Smart Caching for Optimized Web Performance and Reduced Latency <i>Thangavel, Jamuna Deepakraj P, D Deepa</i>	876
146	2031	Design and Simulation of an Efficient Memristor Based Multiplier using Hybrid Logic <i>K Paramasivam, R Nithya, A Jayashree, S Aneesh, R Vijay</i>	881
147	2037	Cybersecurity Analysis of Modern PLCs: Exploring Data Logging and Performance Metrics using the AXC F 2152 <i>Ashmeet Kaur</i>	887
148	2045	Voice Bot for Visually Impaired Persons using NLP <i>S Mohanraj, C Ganesh Babu, M Ragavi Prabha, M Sandhya, T Raghul Vishal, B Rakesh</i>	895
149	2053	Primary Tumor and Lung Cancer Prediction on Dual Energy CT Images for Nodal Metastasis using Deep Learning Technique <i>M Ramkumar, C Ganesh Babu, R Sarathkumar, S Vidhya, Praaveen Hari G S, Priyanka G S</i>	901
150	2066	High-Performance and Power-Efficient FPGA Accelerator for Adder-Based Neural Networks <i>Ganesh Babu C, Praaveen Hari G S, Dinesh Kumar J R, Priyanka G S, Karthi S P, Visvesvaran C</i>	907
151	2070	AI Based Threat Detection System <i>Appikonda Shyam Sai Venkata Agastya, Bandi Rishikesh Kumar, Dandu Sasi Sathvik Varma, Gangu Chirudeep, Kavitha C R</i>	913
152	2071	Effective Energy-Selection Method for Heterogeneous WSN with Differential Power Sources Dependent on Node Energy <i>Rashid Eqbal Khan, Jyoteesh Malhotra</i>	922
153	2086	Sentinel: An Integrated Framework for News Sentiment Analysis, Bias Detection, and Coverage Comparison using LLMs	931

		<i>Prasanna Kumar R, Bharathi Mohan G, Akilesh rao S, Jaikanth Y</i>	
154	2088	Enhanced Plant Pest Classification by Leveraging CBAM Attention in ResNet-9 <i>P Bhuvaneswari, K Srilatha, A Kavya, T Anitha, V Sasikala</i>	937
155	2090	Intelligent Resume Parser and Classifier using Regular Expressions <i>Divya Chennupalle, Thanmai Gaddam, Kavitha C R</i>	942
156	2103	Revolutionizing Sports Analytics: Unveiling Key Determinants of Olympic Success through Statistical Modeling and Innovative Technologies <i>Pullela Harish Chowdary, Puneet Thapar</i>	948
157	2107	Soil Texture Prediction: Advances in Remote Sensing, Image Analysis, and Machine Learning <i>Sangita Roy, Durgesh Kumar Ansal, Manish Kumar</i>	954
158	2121	Material Comparative Study of a Crescent Shaped Circularly Polarized Patch Antenna for Early Detection of Kidney Cancer <i>T Anita Jones Mary Pushpa, Potlapati Abhiram Reddy, B Beulah, Aleena Ajith, Joanna J, Sugumar D</i>	958
159	2123	Mechatronics in Solar-Thermal Evaporators: Technical Innovations from Asia to enhance the Industry in Peru <i>Adrian Nacarino, Ricardo Palomares, Jose Cornejo, Mariela Vargas, Josue Alata Rey</i>	964
160	2132	Advanced Verification Strategy for AHB-to-APB Bridge with Protocol-Aware Test Bench <i>Elango Sekar, Gavaskar K, Genga Sri K, Sundari P</i>	970
161	2137	Neural Sequence Modelling for Spam Classification via Bidirectional LSTM and Hierarchical Neural Networks: A Deep Learning Approach <i>Yakin Ginson, E Bijolin Edwin, V Ebenezer, S Stewart Kirubakaran, M Roshni Thanka, M Manicka Raja</i>	976
162	2143	Real Time Control of a Three Tank Conical System in Non Square MIMO System Configuration <i>Sudhahar Subramanian, Ganesh Babu Chidambaram, Praaveen Hari G S</i>	982
163	2146	ANFIS-Based PWM Control for Electric Vehicle Speed Regulation using an Intelligent ECU with ARM Processor <i>Karthik S, Jeyabharath R, Karthik V, Kirthick Raj K M, Agilan A, Prasanth J</i>	988
164	2151	VLSI Implementation of Pipelined PE Systolic Array-Based 3x3 Matrix Multiplication for Deep Neural Network Accelerator <i>Elango Sekar, Stephen Sagayaraj A, Surendhar D, Nivethitha M</i>	995

165	2159	Enhancing Emergency Response with Real-Time Video Analytics for Natural Disaster Management <i>Diddikati Hashish Sai, Jenefa A, T M Thiyagu, Vidhya K, Catherine Joy R, Stewart Kirubakaran S</i>	999
166	2164	Hierarchical Deep Learning Framework with CBAM and TBAM techniques for Feature Fusion in Colon Cancer Classification from Histopathological Images <i>Harish C, Karthikeyan S, Harikumar Rajaguru, Karuppusamy V, Jaiprasad R, Gowthama Senthur E</i>	1006
167	2165	Hybrid Method of Assessing the Development of Alzheimer's Syndrome through CNN/LSTM and PSO <i>B Vidhya, Shriya Vidhya Muthukumar, C Ganesh Babu</i>	1012
168	2166	Novel Hybrid Feature Extraction for Enhanced Liver Abnormality Detection using Bio-Inspired Classifiers <i>Harikumar Rajaguru, R.Karthikamani</i>	1018
169	2168	Performance Analysis of Sign Language Recognition using Deep Neural Network Architecture <i>Nivishna Shree S A, Sasikala D, Nehaa Shree S A</i>	1023