# 2026 International Conference on Innovative Trends in Information Technology (ICITIIT 2026)

## Kottayam, India
## 27-28 March 2026

## Pages 1–477

IEEE Catalog Number: CFP26V96-POD
ISBN: 979-8-3315-9225-7

IEEE Advancing Technology for Humanity

Copyright © 2026, IEEE

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: | CFP26V96-POD |
| ISBN (Print-On-Demand): | 979-8-3315-9225-7 |
| ISBN (Online): | 979-8-3315-9224-0 |

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 |



# TABLE OF CONTENTS

AgriQPro-Quantum Driven Precision Optimization for Smart Agriculture ..... 1
*Vinutha N, Praveen Posa S, Devanagouda, Gandham Bharathi, Chandan V Reddy, Abdul Haq Nalband*

Adaptive FedGuard-DL Privacy-Preserving and Attack-Resilient Federated Deep Learning for IoT Security ..... 6
*P.Immaculate Rexi Jenifer, Sasthi Kumar C, Saritha PS, P. Changamma, S. Saranya, Ajay Khajuria*

Drug Recommendation System Using Transformers ..... 12
*Datti Mahesh Babu, S Kranthi, Konda Lakshmi Chenna Kesava Rao*

Hybrid Survival Ensemble Model for Employee Attrition Prediction ..... 18
*Dharaneshwar K, Boomika S, Dharanya G, Amirtha N, Keertana R, S. Ravimaran, U. Srinivasulu Reddy*

Learning Emotions Across Modalities Through Hybrid Deep Representation Fusion ..... 25
*Vanka Shireesha, Vinay Kumar Pamula, P. Satyanarayana Murty*

Automated Detection and Counting of Election Campaign Posters Via Deep Learning and Candidate Face Recognition ..... 31
*Manulal M P, Joby N J, Muhammad Anees V, Sivaiah Bellamkonda, Sonia A Joseph, Vijeesh V*

QuickAI: An AI-Powered Content Creation System Using PERN Stack ..... 36
*P.L. Rajarajeswari, Arya Lakshmi M, Hobika A, Tharikesani S, Vibhooshna D M*

Real-Time Speech Enhancement for Dysarthria Individuals Using NLP and Deep Learning ..... 42
*Sambasivarao Chindam, Gobika R, Vijeyasri T, C. Oswald*

Self-Supervised Deep Image Prior with Blind-Spot Networks for Multiplicative Noise Removal ..... 48
*Mahipal Jetta, Appana Saketh Krishna Rao, Kushal, R V S Srikasyap Sagar*

Explainable Multi-Label Classification of Functional Materials Using Composition-Only Features ..... 55
*Sai Harsha Chitipothula, Dandu Venkata Nitish Chandra Teja, Rahul Chowdary, Kritesh Kumar Gupta*

A Shap-Guided Approach to Bridging Interpretability and Security in Adversarial Attack Detection ..... 60
*Divyashree S, J Umamageswaran, Swathi J B, Prabu M*

Multimodal Agentic RAG: A Hybrid Framework for Intelligent Extraction and Adaptive Retrieval on Unstructured Data Streams ..... 66
*D. Karthika Renuka, L. Ashok Kumar, Ms. N. Deepika, Ms. K. S. Thaarugeshwari, Ms. Sriya Santhanam Ms. K. Tejasri, Mr. N. Harisindhu, Ms. P. S. Preethi, Ms. A. K. Sangamithra*

ResNet-101 Refined with Bottleneck Attention for Improved Diabetic Retinopathy Classification ..... 72
*Venkata Naga Pushyami Sanikommu, Parimala Garnepudi*

Mothers to Newborns: A Two Decade Analysis of Female Nutrition and Neonatal Mortality Trends Across Indian States ..... 78
*Ananthika Sajith, Ananya J R, Ann Rose Saji, Megha P, Vaishnavi M, Alwin Poulose*

Offensive Language Detection on Low Resource Languages Using Machine Learning and Deep Learning Models ..... 84
*Gopika B, Deena Anna Dilu, Siranjeevi Rajamanickam, Jobin Jose, Balasubramanian Palani*

A Unified Stacking Ensemble Framework for Crop Recommendation and Yield Prediction ..... 90
*R. Abhinaya Sai, M. Chandralekha*

Comparative Analysis of Imaging and Non-Imaging Medicinal Plant Species Recognition Using Machine Learning ..... 97
*Gaju S. Chavan, Sonali B. Kulkarni, Simran N. Maniyar*

Acoustic Bird Species Classification Using Modified CNN and Attention Bi-LSTM ..... 103
*Uma Maheswari Pandyan, R. Sundarajapandian, Mohamed Mansoor Roomi Sindha S. Gandhimathi alias Usha, Zaakir Ahmed M, Manish Rahul P*

Machine Learning-Based Bias Correction and Probabilistic Forecasting for Precision Agriculture: A Data-to-Decision Framework ..... 109
*Jishnu M, Shanmuga Priya S*

Online Price Optimization of Sunglasses Under Algorithm-Driven Demand Uncertainty: A Hybrid Machine Learning Approach ..... 114
*Mejo Varghese, R Thirumurugan, Binu Thomas, Shamini James*

Enhancing Maize Crop Health: An Explainable AI Approach for Leaf Disease Detection Using Deep Learning ..... 122
*S. B. Gopal, D Nanthiya, Lakshana T, Srimathi S, Vidhyavarshini N*

AI-Generated Fake News Detection Using a Multimodal Approach on the MiRAGeNews Dataset ..... 128
*Tamil Selvan V P, Vignesh S, Siranjeevi Rajamanickam, Balasubramanian Palani*

Adaptive Consensus Selection Using Random Forest Classifier for Blockchain-Enabled Resilient Traffic Networks ..... 133
*T. Vairam, Vishal K, Kavin T, Sengathirsoorian E. T.*

Time and Precedence-Constrained Routing for Last-Mile Food Delivery ..... 139
*G. Poonthalir, Vishwajeet Bharadwaj S*

Exploring Multimodal Fusion of Hyperspectral and Multispectral Imagery Using a Generative Representation Learning Framework ..... 145
*Suryanarayana K, Arunima P, Hannah Elsa Anish, Kalpana P*

Real-Time Audio Pattern Detection for Enhancing Situational Awareness in Headphone Users Using Deep Learning ..... 151
*Dheeraj Konakalla, Shiv Akash S M, Pavithra Guru R*

Explainable and Responsible AI Solutions for Interdisciplinary Applications ..... 157
*Derish Abraham, Shamini James, Binu Thomas*

VOSK: Voice-Assisted Multi-Lingual Smart Kiosk System ..... 163
*Sravan Chand, Keerthana Dhanish, Anitta Kurian, Reuben Mathew Tharakan, Lekshmi R*

Spectral Subset Hierarchical Bayesian Optimization for Hyperspectral Band Selection ..... 169
*Elaveni Palanivel, Vrushali Kamalakar*

Modeling Lightweight XOR-APUF with Improved Resilience to Machine Learning Attacks ..... 175
*Koushik B., Raahul L.S., Sreegayathri K.K., Mohankumar N.*

Evolutionary Prompt Optimization for Large Language Models: A Multi-Task Framework ..... 181
*Surya Vishwanth K, Sreya N, Amrutha Varshini K, Sanjay K, Bagavathi C*

Explainability-Guided Credit Risk Prediction Using Machine Learning Model ..... 187
*Rupam Bhandari, S. P Ramya, U. Samson Ebenezar*

Energy-Efficient Water Quality Monitoring Network and Cluster-Based Routing Protocols ..... 193
*Vivek Thomas, Alanto Noble, Shahana Sherin, Anjali S.V, Dhanya S*

AEFormer: A Hybrid Conv1D-Transformer Model for Concrete Damage Classification via Acoustic Emission Signals ..... 199
*Aman Kumar Gaur, Nipun Bansal, Yashasvi Bansal*

Beyond the Fairness–Accuracy Tradeoff: Genetic Algorithm-Driven Sample Weighting for Age-Based Fairness ..... 205
*Pradeep Singh, Bikesh Kumar Singh, Rajendra Kumar Pandey, Aman Kumar Sah*

OR-Tools Based Driver Scheduler for Cost Optimization With Efficient Driver Usage ..... 211
*Ashwathy Bhooshan, Hari V S*

Digital Meme Forensics: A Multimodal Transformer Framework for Offensive Content Detection on MultiOFF ..... 217
*Vignesh S, Tamil Selvan V P, Srinivasan R, Nikkath Bushra S*

DRIFT-GAN: Distribution-Preserving Adversarial Malware Generation for Dynamic Windows Malware Detector ..... 223
*Avantika Gaur, Mohit Bhatt, Preeti Mishra, Vinod P*

A Cross-Platform Malware Classification Using Domain-Aware Representation Learning ..... 229
*Asmitha K. A., Vinod P., Rafidha Rehiman K.A., Serena Nicolazzo, Antonino Nocera*

A Decision-Aware Machine Learning Framework for Reliable Breast Cancer Classification ..... 235
*Amit Kalita, Himashree Kalita, Kaushik Das*

A Cross Spatio-Temporal Transformer Network for Weather Forecasting ..... 241
*Remya Paul, Cinu C Kiliroor*

Exposing the Vulnerability of Inferring Keystroke Patterns from Mobile Phone Motion Sensor Data Using Deep Learning ..... 247
*Aswin A Nair, Tanuj Karteek Allena, Polu Vivekananda, Abin Oommen Philip*

Assessment of Knee Joint Movements Using Inertial Sensors and Ensemble Machine Learning Models ..... 253
*Adinath R, Madhavan Bharanidivya, Samiappan Dhanalakshmi*

AI Based Medical Care Assistance and Case Sheet Generation Using Basic Disease Prediction with BERT-LSTM Model ..... 259
*Christy Varghese Chacko, Renu Mary Daniel, Albin Rony, Annmaria Jaxon, Ashmi Jomon*

Soft Computing-Driven Energy-efficient Algorithm Design with Combined Optimization and Machine Learning for Resource-constrained Devices ..... 267
*Kandimalla Sasank Sai, Karumanchi Srija, Ventrapragada Chetan Sarma, Aravapalli Sri Chaitanya Puttur Preetham Kumar, Dangeti Suma*

Optimized Soft Skill Prediction Among Computer Science Students Using Particle Swarm Optimization in Boosting Algorithms ..... 272
*Jasmin Nizar, R. Sharmila, Jaseena K. U.*

SemanticStylenet: A Modular Framework for Generating Text-to-Image With Prompt Refinement, Semantic Re-Ranking, and Neural Style Transfer ..... 280
*Abhilash T, Priyadharshini S*

Automatic Quality Grading of Rehabilitation Exercise with Skeleton-Based Deep Learning ..... 285
*Diviti Santhoshi, Yalavarthi Bhavanishwarya, Gundemoni Vineeth, Anjum Nabi Sheikh*

Fully Unsupervised Video Anomaly Detection and Tracking with Adapter-Tuned Foundation Model ..... 291
*Sukanyathara J, Kanchan Lata Kashyap*

Pretrained Genomic Transformers for Accurate Mutation Position Prediction ..... 297
*Anjana M P, Arun K S*

A Hybrid Feature Learning Framework Based on Deep Feature Integration for Better Skin Cancer Diagnosis using Transfer Learning ..... 303
*S. Kamalesh, S. Chidambaram*

An LLM-Based Framework for Structured Knowledge Extraction and Summarization from Patent Documents ..... 308
*Gopakumar G, Sreeja M U*

An Empirical Evaluation of Deep Learning Models for Raga Identification in Carnatic and Hindustani Systems ..... 312
*Amrita Jiju, Akhil V V*

Blockchain-Enabled Explainable Intrusion Detection System for Securing Stock Market Transactions ..... 318
*Malathy S, R. Anandhi*

Multi-Modal Deep Learning for Integrated Weed and Disease Assessment in Soybean Fields using UAV Imagery ..... 324
*N. Karthikeyan, V. Karthick, A. Akilan, D. Bharath*

Design and Analysis of 2-Port and 4-Port Wilkinson Power Dividers using Photonic Crystal Structures ..... 331
*K. R. Balagopal, Nikhil Subramannian, Naveen Renny, Priya R. Das, Resmi N. C, Anagha E. G.*

A Real-Time and Accurate Face Detection and Recognition for Assistive Applications Using YOLOv8 and InsightFace ..... 337
*Cris Maria Shaji, Mohamedsipli M, Lekshmipriya S B, Vengadeswaran S*

Prediction of Crop Analysis Using Machine Learning Algorithms ..... 343
*S Srinivasulu Raju, Harshitha M, Niranjan T, Y Sujan, Koppala Guravaiah*

DECAF: Dual-Domain Evidential Cross-Attention Fusion Network for MRI-Based Cognitive Decline Staging ..... 349
*Afshan Khan, Bushara A R, Bismi Mohammed Ashraf, Navya Raj, Muhammad Salah M. A*

Ensemble Based Chest X-Ray Classification System ..... 355
*Jayasankar K S, Robby R Thomas, Roopika Biju, Rinu Rose George*

MobileNetV2-Based Transfer Learning Framework for Real-Time Embedded Traffic Sign Recognition ..... 361
*Answin Mariya, Sushitha Susan Joseph*

A Hybrid Heterogeneous Graph Attention and XGBoost Framework for Intrusion Detection ..... 368
*Jeena Joseph*

Navigating the Campus: A Technological Framework for Efficient Wayfinding Solutions ..... 375
*Dharshini M, Divyadarshini K, Vijayalakshmi M*

CivicSense: An AI-Driven Benchmark for Waste Classification and Smart Disposal ..... 380
*Vanshika Khanna, Kanishk Dwivedi, Somya Rakesh Goyal*

Multimodal Video Understanding for Captioning Using Clip and Vision Transformer ..... 386
*Mohit Ramchandani, Priyadharshini S*

Agentic AI-Driven Grievance Redressal: Automating Categorization and Routing in Smart Governance ..... 391
*Sarika S, Aaquib Hanan, Afna V N, Jeffy Johnson, K. Vaishnav Nair*

Exploring Facial Feature Extraction and Temporal Dynamics for Deepfake Video Detection: A CNN-RNN Study on Faceforensics++ ..... 397
*Umang Jeswani, Priyadharshini S*

Synchrochain: a Hybrid Ai Architecture for Real-Time Supply Chain Optimization ..... 402
*P Sreejindeth, Padmavathy T*

Optimizing Simeck Cipher for Resource-Constrained IoT Devices: Performance Enhancements Through Computational Redundancy Elimination ..... 408
*Swapnil Mondal, Himanshu Shekhar, Siddhesha Thepade, Shiva Shaklya, Iyappan P*

Towards Accurate and Interpretable Breast Cancer Detection: A Transfer Learning-Based Approach ..... 414
*Sneha M Kuriakose, Jaseena K U, Naveen G Basil Paul*

An Efficient and Secure Product Monitoring Sensor Network Using Lattice Based Ring Signature Technique ..... 423
*Amutha Prabakar M, Padmavathy T*

EEG Signal Analysis for Motor Imagery Tasks Using Deep Learning Techniques ..... 430
*Aadhitya S. V, S. Ishrath Sulthana, Karthikeyan. D, Sutharsan V, R. Lakshmi, Annamalai. G*

Design and Evaluation of a Hybrid Quantum Model for Intrusion Detection Systems ..... 436
*Sweetha S, Manikandan A, Vijayalakshmi M, Harini Mai V G*

AI Voice-Based Respiratory Health Screening with Risk Alerts and Privacy ..... 442
*M Nirmala Devi, Shafiya Mariyam S, Kanishka R R, Umapriya V*

Real-Time Crime Detection and Suspicious Activity Classification in Public Spaces Using Deep Learning and Enhanced Surveillance Technology ..... 448
*Dinesh J, Sornalakshmi K*

Enhancing Transformer-Based Hidden Suicidal Intention Detection with Sequential Modeling and Psycholinguistic Feature Fusion ..... 454
*Midhun Prahash S. R, Rhea Alphonsa Jose, Sam. V. George*

IoT-Based Healthcare Monitoring with Emergency Alert System and Unified Dashboard ..... 460
*Girisudhan V, Nalin Gugan S U, Ganesan M*

ADA-XAI: Adaptive Faithfulness-Driven Explainability for Hybrid EVA-02 and Deformable CNNS in Brain Tumor Diagnosis From MRI Images ..... 467
*Sreehari R, Abhinav R, Kalidas V. S, Neeraj Sukumaran, Rajeev Rajan, Chinchu M S*

Multi-Channel Hybrid Deep Learning Architecture for Automated Cyberbullying Detection in Social Media ..... 472
*Rajiv Kumar Nath, Inderpreet Kaur, Manmohan Singh Yadav, Sandeep Kumar, Tanay Mehta*

Evaluation of Individual Hybrid Transformer Based Models for Abstractive Summarization Using Bertscore for Semantic Similarity Assessment ..... 478
*Bhavya Sree S, Lena Merin Viju, K. Nandhini, Jayapriya J, Vinay M*

The Role of ML Algorithms in the Diagnosis of Neuro Developmental Disorders: A Survey ..... 484
*Athithya S., S. Vidhusha, S. Karthika, Harisuthan T.*

Adaptive Illumination Transfer: A Cross-Attention Approach to Image Harmonization ..... 491
*Gayathri Dili, Arun K S*

Explainable Hand Gesture Recognition using SHAP-Enhanced ParallelCNN ..... 499
*Rahul Kumar Chaurasiya, Aman Yadav, Mitthu Kumar, Md Tarik Anvar*

Weighted Ensemble for Breast Cancer Classification Using Genetic Algorithm - Base Feature Selection and Hyperparameter Optimisation ..... 505
*Ann Therese Robert, Sushitha Susan Joseph*

Improving the Performance of ECG-Based Affective Classification Systems Using Cepstral Features ..... 511
*R Yazhini, S R K Madhavh, D V Prashannaa, S Dharun, H Haritha, C Santhosh Kumar*

A Hybrid Lightweight Cryptographic Algorithm for Resource-Constrained IoT Systems ..... 517
*Divya James, Lakshmi K.S., Pallavi Ajith, Ahina George*

Reptile Meta Learning Based Beaconing and C2 Behaviour Detection in Network ..... 524
*Graeson Joshua Elijah, Amrith Saras, Renu Mary Daniel, Diya Jothish*

Oncoverse: A Multi-Agent Conversational System for Breast Cancer Detection ..... 530
*Sharanya Acharya, Yami Sunil, Poshika Reddy, Padmavathy T*

Hybrid Recommendation Systems: Performance Analysis on Sparse Vs. Dense Interaction Data ..... 536
*Sumithmon KS, Rahul Shajan*

Vehicle Detection and Tracking Using Thermal Cameras in Adverse Visibility Conditions ..... 542
*Damodaran A R, Dhinesh Kumar R, Venkatesan S*

Architectural Variations of YOLO for Skin Cancer Detection: Backbone–Head Flip Analysis ..... 548
*Midhun P Mathew, Athira Pradeep, Albin John Wilson, Adarsh S, Amal Sabu, Aswajith Sajeev*

Traffic Sign Image Classification Using Deep Learning ..... 554
*Answin Mariya, Sushitha Susan Joseph*

Explainable BiLSTM and SVM Hybrid Model for Fake News Detection ..... 560
*Anamika H Nair, Sushitha Susan Joseph*

Kullback–Leibler Divergence Based Fuzzy C-Means Segmentation Algorithm for Magnetic Resonance Imaging Data ..... 566
*Deepa Joseph, S.N Kumar, Midhun P Mathew*

Smart Anti – Snoring Pillow with IoT- based Health Monitoring and Sleep Apnea Risk Analysis ..... 572
*M Ponni Bala, Pooja V, Sakthi Murugan P, Srimathi S, Vimal Prasath T*

Stock Price Prediction using a Hybrid of TimeXer and FT-Transformer Models ..... 578
*Denitta Daison, Blessy Paul P*

Smart Pipeline Cleaning Robot with Camera Inspection and Dual Cleaning Mechanism ..... 584
*C. A. Subasini, Ishwarya M, Elizabeth Chrysolite E*

Social Engineering Threat Detection on Reddit Using OSINT and Transformer-Based NLP Model ..... 590
*Aafiya Shameer, Amitha M. M., Alida P. S., Angel Vivek K, Renu Mary Daniel*

Deep Learning Driven — Side Channel Cryptoanalysis with Adaptive Trace Profiling and Cross - Platform Generalization ..... 596
*Aron Devan, Akash S, S. Balapriya*

C-Trust System for Anti-Counterfeiting in Supply Chain Management Using Block Chain Technology ..... 602
*Kopparthi Bhaskara Naga Pradeep, R. Yugha, Illa Mohan Siva Rakesh*

Ethnobridge: Reviving Traditional Wisdom Through AI for Contemporary Wellness ..... 608
*Safa Shaik, Marrion Israel Abraham, N. Senthamilarasi*

AI-Powered Framework for Personalized Fitness and Diet Recommendations using Clinical Biomarkers ..... 614
*Veerajeevanandam V, Santhosh perumal S, Percy Paulin J*

Evaluating the Robutness of LLM Against Data Posioning Attacks in Cybersecurity Datasets ..... 620
*Maninder Kaur, Sangeeta Singh, Usha Sree R, Neha Gupta, Mohit Garg, Meenakshi Munjal*

Blight Disease Detection and Severity Estimation in Crop Leaves Using Deep Learning with Grad-CAM ..... 625
*Karishma P, Akash Velan A, Vishal Ganapathy S, Malathi M*

Hybrid Quantum Computing Workflow Optimization ..... 631
*Khalid Abdul Jaleel, Gold Sharon R, Nivi V*

Phishing Attack Detection with Minimal Features Using Snake-Frog Predator Optimization Algorithm with RNN and LSTM ..... 637
*S. B. Gopal, E. Silambarasan, S. Aravindkumaran, S. Vinothkumar, Anandh Babu M, Sedhumadhavan S*

FreshVision: Automated Quality Assessment System for Fruit Grading Using Deep Learning ..... 644
*Raunit Raj, Nikesh Chaudhary, Sneha Baidnath Pandit, Abhishek, Nawneet Pandey, Nitin, Vijay Shukla*

Prune Smart, Train Sharp: ADMM-Powered CNN and INN Models for Image Classification ..... 650
*Jishnu Teja Dandamudi, Yogendra Chhetri*

Self-Adaptive HOA Driven Deep Optimization Framework for Robust Infant Pose Estimation ..... 656
*Kalaimathi R, S. Latha, Samiappan Dhanalakshmi*

Design and Analysis of a Low-Cost Smart Parcel Receiving System with Dual-Layer Authentication ..... 661
*S.N. Kumbar, Rahul J. Teradal, Radhika Kiran Lohar, Muskan Abdul Latif Dhalayat, Soumya Gadag Ganesh H Gadiwaddar*

Detection of Abusive Language in Social Media ..... 667
*B Chaitanya Krishna, CH Poorna Chandra Rao, Rajashree, M S Roobini, Jemshia Miriam, Nafees Muneera*

LLM Augmented Framework for Realtime Accident Detection and Analysis ..... 675
*Aiswarya A, Falguni Shinde, P Sreejindeth, Subramaniyaswamy V*

Smart Cradle: An IoT-Based System for Intelligent Infant Monitoring ..... 681
*Adithiyaa D, Lakshhmi Narayanan T, Gokulakkrishna Saravanan, Parvathy A K*

Intelligent Medical Report Analysis System: A Serverless Cloud Architecture for Automated Healthcare Diagnostics ..... 687
*Adithiyaa D, Lakshhmi Narayanan T, Gokulakkrishna Saravanan, Deepa Nivethika S*

Federated LLMS for Collaborative Cyber Threat Intelligence without Data Sharing ..... 693
*Sahana MP, Gulnoza Jalilova, Pulicherla Siva Prasad, Shilpa Sharma, Mohit Garg, Meenakshi Munjal*

Attention-Based Visual Question Answering on Chest X-Rays for Lung Disease Detection ..... 699
*K Chaitanya, Kiran P*

KidneyAI-A Lightweight Deep Learning Framework for Early Classification of Kidney Diseases Using Ultrasound Images ..... 704
*Paulin A, Priyadharshini R, Umayal AR*

Securing Medical LLMs with Differential Privacy Against Inference and Reconstruction Attacks ..... 710
*Kadiyala Sai Sathvik, T. Gireesh Kumar*

A Lightweight IoT-Based Framework for Real-Time Packet Analysis and Network Threat Detection ..... 716
*Pranish K, Chandralekha M, K Geetha*

FuzionNet: Fuzzy-Enhanced VGG16 for Weed and Crop Classification ..... 722
*M. Prasannakumar, P Anusha Devi, Muthupandi M, Surendran S, Vanitha L, M. Revathi*

Ensemble Deep Learning Framework for Alzheimer's Disease Early Identification and Categorization Using Brain MRI ..... 728
*Ashutosh Pandey, Shashi Prabha*

A Blockchain-Integrated Privacy Framework for Audio Copyright Protection Using ZKP and Attribute-Based Encryption ..... 734
*J Umamageswaran, Nadigatla Jyothi Kumar, Paruchuri Jagannath Rao*

Deepfake Shield: A Hybrid System for Real-Time Detection of Synthetic Media Using AI ..... 740
*Kavirithanya E V, Keren Elizabeth Nivea. A, A. Yovan Felix*

Enhanced Indian Sign Language Recognition Using Dual-Attention CNN Integrated with Firefly Optimization ..... 746
*N. Sheela, B. Bharathi Kannan, M. Prasannakumar, B. Rajalingam*

Optimizing Zero-Knowledge Architecture for Edge Computing: An Easy Approach to End-to-End Encrypted File Sharing ..... 752
*Darshan Odedara, Joshan Athanesious J., Kiruthika S.*

Design and Implementation of a Secure Online Voting System Using Haar Cascade Based Facial Biometric Authentication ..... 758
*Rahul J. Teradal, S.N. Kumbar, Radhika P. Giraddi, Soumya Gadag, Mahantesh S Mannikeri Ranjita Akkasali*

Automated Arrhythmia Classification from ECG Signals Using 1D Residual Networks ..... 764
*Snehas Kale, Vishnu Raj Rajesh Kumar, Antony Seba. P*

AI-Powered Smart Shoebox Designer with Privacy-First Personalization ..... 771
*Steve Alex Mathew, Sankeerth Rajesh Nair, P. Antony Seba*

Federated Learning for Rural Healthcare Diagnosis ..... 776
*Martala Abiram Reddy, Shaik Mohammed Humza, Usama Abdur Rahman*

Locomotive Scheduling Optimization Based on Bio-Inspired Algorithms ..... 783
*Adarsh Ramachandran, Swapnesh S., Rekha K. S.*

Improved Cell Nuclei Segmentation Using a Convolution Blur Attention Enhanced Transformer Based U-Net ..... 788
*Aditi Damodar, Hitesh Tekchandani, Madhu Oruganti, Praveen Kumar Shukla*

Bank Customer Churn Rate Prediction and Minimization Using Machine Learning ..... 794
*Bollepalli Amrutha Varshini, Bolla Gayathri, V. Surya, K. Lalitha Devi*

Knowledge-Centric Deep Learning Frameworks for System-Level Intelligence in 6G Wireless Networks ..... 802
*R. Ravi, A. Priya, Reshma P, D. Abinaya, S. Hariprabha, Kannan R*

Dual-Input Transfer Learning for Efficient and Robust Masked Face Recognition Using an Enhanced ResNet-50 Architecture ..... 808
*Santo Cherian, Binu Thomas*

Intelligent Adaptive Video Network Digital Twin for Bandwidth-Aware Smart City Surveillance ..... 815
*A. S. Radhamani, Vijaya Sai Nandapati, Jagarlamudi Sri Vyshnavi, Rachepalli Laasya Bhogolu V N S S Aakash*

Improving Software Testing with RAG-Based LLMs and Supporting Indian Regional Languages ..... 821
*Carol Joanna Bright M, Kripaa P, Karishma S, Freida Judith I, Usama Abdur Rahman*

Comparative Analysis of Quantum and Multi-Model Deep Learning Approaches for Skin Lesion Classification ..... 827
*Sireesha Moturi, Chinnapareddy Anjali Reddy, Dogiparthi Dhanusha, Shaik Chikli Asifa Chandra Mouli Kathi, Sasidhar Bola*

Semantic-Aware Knowledge-Driven Deep Learning for Cognitive Optimization in Next-Generation 6G Networks ..... 833
*B. Dilip Kumar Reddy, Narayanam R S Lakshmi Prasanthi, A Velayudham, Sheela Pitta, Abinaya N Machiraju Sivakumarraju*

A Hybrid Bio-Inspired Framework for Stroke Risk Prediction: Integrating Negative Selection, Ensemble Learning, and Fuzzy Reasoning ..... 840
*Neena Suresh, Binu Thomas*

Cryptographic API Misuse Detection Using BERT-Based Model ..... 846
*Tanay Kinariwala, Mahir Shah, Vanshi Gathani, Aditya Khabiya, Sakshi Jadhav, Anushka Kenia Vedant Agarwal, Vansh Bhatia, Soham Kher, Divyansh Kedia, Aaryan Mantri, Anant V. Nimkar*

AI Scribe Assistant: Voice-Controlled Exam Writing Platform for Accessible and Hands-Free Assessments ..... 852
*Bharath Singh J, Prithivi Rajan J, Pranesh Kishan V J, Sakthi Shri T, Vismaya A, Vivekrabinson K*

Multi-Modal Emotion Recognition on Physiological Signals Using Self-Supervised Deep Learning Models ..... 858
*Mayank Sharma, Divyanshu Desai, Geetha Sri, Kumaran P*

Constraint-Aware LLM Pipeline for EvoGym Environment Generation with Fitness-Guided Prompt Refinement ..... 864
*Bagavathi C, C. Shunmuga Velayutham, Mahesh Narayanabhatla*

Feature Aggregation and Multi-Class Detection (FAMCD) Framework for Skin Cancer Classification ..... 871
*Ifjaz Ahmed M, Sahithy Ayyagari, Uma Maheswari M, Premaladha Jayaraman*

Blockchain-Based Secure Document Sharing System with Group-Based Access Control and IPFS Integration ..... 878
*Bolisetti N V S Krishna Yaswanth, Cheruvupalli Sudheesh, S. Priya*

A Comparative Study of Multilingual Transformer-Based Models for Offensive Language Identification in Code-Mixed Malayalam ..... 883
*Christine Mary Paul, Joanna Sara Jipson, Sam Ruben Abraham, Arjun Manjunath Balasubramanian Palani, Jobin Jose*

A Comparative Analysis of Deep Learning Architectures for Multi-Label Audio Tagging and Source Separation ..... 889
*Venkata Sri Shanmukha Akhil Burra, Raja Sravan Kumar Kovvali, Prasanna Kumar Reddy*

Cyberus: AI Driven Smart Lock with Multimodal Biometric Access Control System using Raspberry Pi ..... 895
*Archita Prabhakar, Dhanika Dennis, Sonia Jenifer Rayen*

Semantic Retrieval and Fine-Tuned MPNet Embeddings for Intelligent Life Insurance Policy Recommendation Systems ..... 899
*Charan Aravind A, V Bala Narendra Kumar, M Sairam, K Ajay Kartheek Dora, P N V Syamala Rao M*

Identification and Mitigation of Gender Bias in Indic Languages Using Adversarial Learning ..... 904
*Sebin Beebi Philip, Bindu K. R*

Evaluating Attention as Explanation in Transformer-Based Sentiment Analysis using Counterfactual and Stability Metrics ..... 910
*Nemali Ashrith Reddy, Kiran P*

Microstroke-Based Boundary Representation for Brain MRI Tumor Segmentation Using U-Net ..... 916
*Surya M, G B Hitesh Vaibhav, Thanekesh V, Veerapu Goutham, Nisha J S, Gopinath Palanisamy Abdul Rahim VC*

A GAN-Based Vision Transformer Model for Explainable Plant Disease Identification ..... 921
*B. Sathiyaprasad, V. Vigneshwaran, P. Sanjay*

Dental Disease Classification using MobileNetV3 and Deep Learning ..... 929
*Megha Rani R, Veerendra Nayari, Pranav K, K Nagendra Pai, Sanketh S Hegde*

Improving Weather Forecast Reliability: Refining Deterministic Initial Predictions with Probabilistic Diffusion Models ..... 935
*Mouleshwar Saravanan, Vidyadhar Upadhya*

Environmental Sound Classification Using Deep CNN and Mel-Spectrogram Images ..... 941
*Sai Venkata Santhosh Ganjikunta, Dinesh Kumar Reddy Tatigutla, Dhanush Krishnapatnam Dinesh Karthik Kandregula, Bala Venkateswarulu Isunuri*

AMF-Net: A Multimodal Attention-Based Network for Rice Yield Prediction ..... 947
*A. S. Radhamani, Laghumavarapu Chanikya, Gokaraju Surya Satya Narayana Raju Venkata Sri Hari Haranath Pelluri, Byreddy Uday Pujith Reddy*