

# **2024 11th International Conference on Advances in Computing and Communications (ICACC 2024)**

**Kochi, India  
6-8 November 2024**



**IEEE Catalog Number: CFP2411T-POD  
ISBN: 979-8-3503-7914-3**

**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:	CFP2411T-POD
ISBN (Print-On-Demand):	979-8-3503-7914-3
ISBN (Online):	979-8-3503-7913-6
ISSN:	2766-3248

**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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

## Table Of Contents

Face Generation And Recognition In Forensic Science	
<i>Jeffin Jitto, Gayathri Ravi, Jocelyn Joshy, Heynes Joy, Jisha Jose</i>	1
NAIN: Real-Time Object Detection And Navigation Assistance For The Visually Impaired Using Single Shot Detector Model	
<i>Nisha Varghese, Muskan Kumari Gupta, Shikha Agrawal</i>	5
Two Fingered Gripper Mechanism-Based Mechatronics System For Borewell Rescue Operation	
<i>Harish Kanna, Manojkumar V, Vishnu V M, Arun Joseph, Madhan Mohan, Joe Mathew</i>	10
Performance Analysis Of CNN Model For Digit Recognition	
<i>Sweety Kunjachan, Ivan I Kavungal, Paul Jojoy Chirayath, Kala S</i>	16
Demystifying The Data: Leveraging Explainable Ai For Real-Time Monitoring And Decision-Making In Vertical Hydroponics Farms	
<i>Gayathri Dili, Alyn George, Fernando J Thiruthanathil, Sidharth B Nair, Arjun Bittaj, Swathi Dinesh</i>	22
Forecast Pv Generation, Ev Charging Schedule, And Energy Load Demand For Optimal Power Scheduling In P2p Nanogrid Network	
<i>Abitta Mathew, Thara Mohanan, Mabel Ebenezer</i>	28
Feature Importance And Model Performance In Deep Learning For Speech Emotion Recognition	
<i>Ramkrishnan P, Reji K Dhaman, Alwin Poulose</i>	34
Melodic Precision: Unveiling The Impact Of Recursive Feature Elimination On Music Genre Classification	
<i>Govindram Neware, Alwin Poulose</i>	40
An Intelligent Iot Solution With Real-Time Monitoring For Road Safety	
<i>Jasna K Azeez, Bella Mary, G.Manoj, G.Sivasankari</i>	46

Machine Learning Assisted Sanitizer Quality Identification Using Permittivity Measurement	
<i>Thushara H P, Mridula Shanta, Neema K</i>	52
Enhanced Solar Power Forecasting With Cnns Using Sky Imagery And Cloud Detection	
<i>Karthika S S, Surya K, Rahul Satheesh</i>	57
Utilizing Neural Networks To Analyze Respiratory Sounds For The Detection Of Lung Disease	
<i>Ramyasri M M, Yoga M, Monisha K, Mohamed Rizwan M, Harish C</i>	63
Deep Learning-Based Identification Of Pneumonia From Chest X-Ray Images	
<i>Kayalvili S, Devadharshini T, Dharaneesh N, Dhanush P</i>	69
Crime Data Mapping Using Hdfs For Data Visualization	
<i>Sajna Mol H S, Dr. Gladston Raj S</i>	75
Advanced Machine Learning Approaches For Robust Credit Card Fraud Detection: A Comprehensive Evaluation And Practical Insights	
<i>Chinnu Varghese, Sharika T R, Akshaya Jayaraj, Sreedevi R Krishnan, Anila S, Shyama R</i>	79
Exploring Explainable AI in Large Language Models: Enhancing Transparency And Trust	
<i>Ijas A H, Ashly Jo, Ebin Deni Raj</i>	85
Gaze Detection And Text Extraction From Images Using CNN with DBscan-based Filter Design	
<i>Jithin Jose, Ajeesh Ramanujan</i>	92
Geochromnet: Declustering Metaphase Chromosomes Via Topology-Informed Deep Instance Segmentation	
<i>Dinu A G, Lekshmi Priya C V, Vinod B R, Biju V G, Nonam Chellapan, Smitha G Raj</i>	98
Hybrid Cnn-Total Variation Deconvolution For Mitigating Atmospheric Seeing Effects In Ground-Based Astronomical Imaging	
<i>Areyendhu Shalu, Vishnu Vasudev, M. V. Rajesh</i>	104
Hate Speech Detection In Social Media Using Bilstm	
<i>Sheen Kuruvilla, Shifa Fathima, Suryalekshmi S, Varsha Saju</i>	108

Ensemble-Based Deep Learning Approach For Characterization Of Thyroid Nodules In Ultrasound Imaging	
<i>Ajilisa O A, Jagathy Raj V P, Sabu M K</i>	114
Antimicrobial Resistance Prediction Using Neural Networks For Gonorrhea	
<i>C.S Vasavi, Yashaswini Manyam, Srinidhi Sundaram, Ritesh Raj, Karthikeyan B</i>	120
Impacts Of Image Pre-Processing Techniques On Lung Cancer Classification	
<i>Nishiya Vijayan , Jinsa Kuruvilla , Jayan K George ,Sumod Sundar</i>	126
Swinleafexplain: Interpretable Cotton Disease Classification With Swin Transformer	
<i>Selvaraj Mariyappan , Jeena Thomas ,Ebin Raj</i>	132
The Impact Of Optimization Techniques On Cancer Classification With Gene Expression Data	
<i>C.S Vasavi, Sai Varun B P, Ishita Jonnalagadda, Vishnu Vardhan Ch, Apurvanand Sahay</i>	138
Effect Of Pneumatic Based Hybrid Robotic Gripper For Safer Handling Of Complex Geometries	
<i>Santhosh Sivaraj, Ajay Ravi, Bibin Joe Jose, Gobinath Velu Kaliyannan, Rajkamal Sivakumar, Riya Catherine Amalraj</i>	144
Ai-Driven Diagnostics: Comparative Analysis Of Machine Learning And Deep Learning Approaches In Multiple Sclerosis Diagnostics	
<i>Anitha L., D. Narmadha, G. Naveen Sundar</i>	149
Skill Mount: Personalized Career Skills Development Using Machine Learning Algorithms	
<i>Salva Fathima, Nihal N N, James Joseph, Akhil Krishnan, Priya C V</i>	155
Detection Of Sleep Apnea: A Comparative Analysis Of Advanced Machine Learning And Deep Learning Approaches	
<i>Prajitha M V, Dr. G Naveen Sundar, D Narmadha</i>	161
Verifiability And Visibility Of The Data Modification In the Cloud Using Enhanced Attribute-Based Encryption(Abe)	
<i>Vasantha SV, Royyuru Srikanth, Suchithra Kummari, Sai Nirup Reddy Maram, Mahesh Govindula, Thanmai Banku</i>	167

Soil Monitoring And Crop Recommendation System Via Iot And Machine Learning	
<i>Bennila Thangammal, Poorna Saai M, Muhammad Taufeeq Umar N, Nithish S S, Muruges K, Tharun Kumar S</i>	172
Responsible Ai Framework For Large Language Models (Llms)	
<i>Sheetesh Kumar, Naman Kandhari, Bharat Tripathi, Kulvinder Singh, Narendra Pal Singh</i>	178
Identification Of Fake Medicinal Raw Materials Using Machine Learning Techniques	
<i>Raghi K R, Hariharaan S, Sudha K</i>	184
Explainable AI Revolutionizing Kidney Transplants: Seeing Clearly To Save Lives	
<i>Akshara Balan, Gayathri Dili, Akshitha Balan, Tom Davis, Mohammed Yazeen, Alan C M</i>	190
Seismic Spectrogram-Based Elephant Detection System	
<i>Rithwik Vallabhan TV, Jaimy Poovely, Noel Martin, Remya Ramesh, Gautham VG, Gouthamkrishna R</i>	196
Nearbysell : A Novel Approach To Localized E-Commerce With Focus On Seller-Customer Interaction And Enhanced Local Retail Network	
<i>Vishal Chavan, Ashok Hake, Bhukya Nageswar Rao, Suyash Kotkar</i>	202
Leveraging Hybrid Machine Learning Technique For Effective House Rental Price Forecasting	
<i>Komalavalli D, Naveenkumar Anbalagan, Madhumitha M, Najma N, Kaviyanbu K, Mathiyarasi P</i>	208
Smart Blood Circulation Booster For Enhancing Cardiovascular Health In Hilly Regions Using Iot- Based Sensors And Thermoelectric Technology	
<i>Sreenithi K R, Sanjana S, Rishitha P, Gopu G</i>	214
Design And Analysis Of Slam-Based Autonomous Navigation Of Mobile Robot	
<i>Deepa TR, Jose Mathew, Sarah Jacob</i>	218
Gan-Enhanced Brain Slice Images For Detecting Alzheimer's Disease	
<i>Albin Vincent, Ancy A</i>	224

A Comparative Analysis Of Fashion Cloth Feature Extraction Methods Using Text And Image Data	
<i>Lemya Sainudeen Attoor, R Chitra, Anusha Bamini A M</i>	230
Analysis And Implementation Of Different Levels Of Modified Hybrid Multilevel Inverters for Renewable Energy Applications	
<i>Sreehari S, P Aruna Jeyanthi</i>	236
Ecg Signal Classification And Anomaly Detection Using Lstm And Hmm Models	
<i>Karthik Garikipati, Vinitha Chowdary A, Tejaswi Muppala, Sarada Jayan</i>	242
Robust Direction Of Arrival Estimation With Time Modulated Arrays Using Modified Music Algorithm	
<i>Aswathi P, Magnel Rose Mathew, Deepti Das Krishna</i>	248
Glaucoma Diagnosis From Smartphone-Captured Fundus Images Using Deep Learning	
<i>Madhu K, Shinu Mathew John, Asha Joseph, Bejoy Abraham</i>	253
IoT-Cloud Integration For Enhanced Container Weight Monitoring And Alerting: A Real-Time Solution	
<i>Stephen Kallarackal, M Krishna Priya, Sanker Menon, Suraj Abraham, Abraham Thomas</i>	259
Impact Of Gate Oxide Thickness Variation On The On-State Safe Operating Area And Fom Of Soi-Junctionless Finfet Considering The Self-Heating Effects	
<i>Vinaya S J, Nikhil K S</i>	265
Improving Obfuscated Malware Classification: A Machine Learning Approach With Feature Selection And Data Balancing	
<i>Saravanan Selvam, Gundu Bhavana, Pudota Mokshagna Bhuvan Chowdary, K Deepak</i>	270
Deep Learning-Based Fault Diagnosis Of Rolling Bearing Using Spectrogram And Cwt Images Of Vibration Data	
<i>Thomas Joseph, Sudeep U, Keerthi Krishnan K</i>	276
Ai Meets Cyber Defense: Enhancing Network Security With Gan-Driven Nids	
<i>Sarika S, Arya Paul, Ajay Kumar, Anju George</i>	281

Improving Pm 2.5 Prediction Accuracy With A Hybrid Eemd-Cnn-Bilstm Approach	
<i>Gaurav Pandey, Rajneesh Sharma, Tushar Shikhola</i>	287
Design Of A Ptat And Bandgap Current Reference With On-Chip Digital Calibration	
<i>Anupama A, Immanuel Raja, Deepu Roy, Padmakumar K</i>	293
Fast Iterative Filtering Based Approach For Seizure Detection In Eeg Signals	
<i>Likith Adithya Atmuri, Kuppala Gowtham Sai Chandra, A Venkata Sai Krishna Varun, Devika Krishna Kumar, Soman K.P, Neethu Mohan , Sachin Kumar S</i>	299
Analyzable Metaphase Image Selection Using Deep Learning	
<i>Anjali S , Gopakumar C</i>	305
Design, Development, And Analysis Of Spiral Microstrip Resonator Filter	
<i>Lauksiga M P, Naveen Krishnan, Pranav Vinod, Suraksha Rajagopalan, Sreedevi Menon</i>	311
Path Tracing And Validation Of Omni-Wheeled Mini Robot Using Visual Feedback	
<i>Aftaab Ahammed, Karthik Jayaraj, Shibir Fazil, Nikitha S, Sudheer AP</i>	315
Leveraging Acoustic Features And Deep Neural Architectures For Audio Deepfake Detection	
<i>Vikram Sundaram, Babitha S , Susmitha Vekkot</i>	321
Newton-Euler Based Computational Modeling And Trajectory Planning In Human Arm Flexion-Extension Movements: A Preliminary Study For Collaborative Robot Implementation In Rehabilitation	
<i>Mohamed PA, M Krishnaprasad Varma, Guru Revathi B Revathi B, Sudheer AP</i>	327
A Blockchain Based Vehicular Ad-Hoc System	
<i>Samuel Sabu Thomas, Anjana S , Viswesh Parameswaran, Sidharth A J, Arya Paul, Vyshnav C J, Jayesh TP</i>	333



Digital Watermarking In Astrocytoma Brain Tumor Mri Images Using Discrete Stockwell Transform	
<i>Nimmy George, Manju Manuel , Michael George</i>	339
Detection Of Road Attributes Using Lidar	
<i>Anoop Thomas, Jobin Antony, Sarath Chandran S</i>	345
Malayalam Fake News Detection Using Optimized Convolutional Neural Network (Opcnn)	
<i>Aiswarya Mohan ,Nafla Iqbal, Manaal Mashpher</i>	350
Personalized Music Recommendation: A Comparative Study Of Machine Learning And Deep Learning Approaches	
<i>Nafla Iqbal, Aiswarya Mohan, Ann Rose Syjo</i>	356
Interpreting Temporal Dynamics In Distributed Fuzzy Cognitive Maps For Time Series Prediction	
<i>Haritha K, M V Judy</i>	362
T1w Mri To T2w Mri Image Synthesis Using Ssim-CycleGAN	
<i>Meharban M S, Sabu M K, Santhanakrishnan T</i>	368