2025 International Conference on IT Innovation and Knowledge Discovery (ITIKD 2025)

Manama, Bahrain
13-15 April 2025

Pages 1-460

IEEE Catalog Number: CFP25CK6-POD
ISBN: 979-8-3503-5547-5

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:	CFP25CK6-POD
ISBN (Print-On-Demand):	979-8-3503-5547-5
ISBN (Online):	979-8-3503-5546-8

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

Table of Contents

A Blockchain-Driven Secure Management of Patient Health Records Using Federated Learning Algorithm 1
Baranidharan A, Kailasam Selvaraj, Rajkumar Pandiarajan, Anuja J, Kiruba Selin M, Santhiya J and Kavya S

A Secure and Privacy-Centric Blockchain Platform for Cloud-Based Healthcare Data Management 7
Shatha A. Baker, Kifaa Hadi Thanoon, Marwah Najm Abed, Muataz Almansor, Taha Y. Abdulqader and Omar I. Alsaif

An Optimal Cipher Algorithm for Wireless Sensor Networks 12
Shatha A. Baker, Ahmed S. Nori, Kifaa Hadi Thanoon, Taha Y. Abdulqader, Mohammed T. Majeed and Muataz Almansor

Utilizing Modified Viterbi Algorithm for Religious Text: A Cebuano Part-of-Speech Tagging 18
Jeneffer A. Sabonsolin, Shaneth C. Ambat, Angelo C. Arguson, Fanny C. Almeniana, Elisa V. Malasaga and Hadji T. Tejuco

The impact of social media on dietary supplement consumption in Bahrain 24
Rabab A.Wahab, Mariam Al-Annan and Enas M. Darwish

Low-Code/No-Code Platforms: Impact and Concerns 32
Omar Abahussain and Jaflah Al-Ammary

Innovative Blockchain and AI Solutions in Healthcare 38
Fayzeh Abdulkareem Jaber, Redha Jasim Shaker, Nour Abdulkareem Jaber, Fadheela Hussain, Ahmad Abdulkareem Jaber and Vishwas Chakranarayan

Voice Cloning Detection Using Deep Learning 49
Atef Isa Abdulla Husain Abdulla and Jenan Moosa

Integrating Modern Portfolio Theory into Information Security Control Selection Optimisation 55
Muhammad Zaid Abrahams and Josef Langerman

Advancements in 3D Printing for Water Infrastructure in Disaster Relief Efforts 66
Ren Ren A. Agustin, Mylene D. Gomez, Ian B. Benitez and Von P. Barcebal

Waste Definition and Identification in Software Engineering: A Review 72
Khalifa Ahmed, Nour Ali and Wasan Awad

Decoding Machine Learning Algorithms for DR Detection 76
Jagrit Ahuja, Varun Sharma, Raghavv Gupta, Preeti Kapoor and Shaveta Arora

Accessible Edugaming: Fostering Inclusive Learning Through Interactive Points, Leaderboards, and Confidence-Building Features 83
Sungheetha Akey, Raihana A, Rajesh Sharma R, Sindhu V and Sheila Mahapatra

AI-Driven Optimization in Sustainable Smart Greenhouses: Leveraging LARA for Latency-Aware Resource Allocation in Stream Processing Analytics 90
Sungheetha Akey, R C Karpagalakshmi, K Sasi Kala Rani, Rajesh Sharma R and Sheila Mahapatra

HESTStream: Hybrid Edge-Stream Processing Framework for Sustainable Smart Cities Using Adaptive Caching and Environmental Monitoring 96
Sungheetha Akey, Rajesh Sharma R, Sheila Mahapatra, Tamilarasi R and A. Ezil Sam Leni

ESPEAR: Enhanced Stream Processing for Environmental Analytics and Renewable Energy Integration Using Smart Dielectric Sensors 102
Sungheetha Akey, Rajesh Sharma R, Sheila Mahapatra and C H Sairam

Adaptive Stream Processing Framework for Smart City IoT Networks Using Self-Powered Photodetector-based Data Collection 107
Sungheetha Akey, Sasi Kala Rani, Rajesh Sharma R, Sheila Mahapatra, R C Karpagalakshmi and G S Pradeep Ghantasala

Neuromorphic-Enhanced Smart ECG Reconstruction with Explainable AI for Green Healthcare Systems 112
Sungheetha Akey, Rajesh Sharma R, Sheila Mahapatra, Tamilarasi R and A. Ezil Sam Leni

Examining the Interconnection between Knowledge Management, innovation, Artificial Intelligence, and Leadership for Organization Development 119
Prof. Adel Ismail Al Alawi and Anfal Al Qumaish

Innovative Traffic Monitoring System Using Drones: A Literature Review 127
Adel Ismail Al-Alawi and Reem Abdulghani Swar

Integration of AI in Capturing Tacit Knowledge of Employees Leading to Innovation in Organizational Learning: A Literature Review 135
Prof. Adel Al-Alawi and Shoug Abdulrahman Al-Ahmed

Investigating the Effectiveness of Drone Technology in Delivering Medical Supplies to Remote or Underserved Areas 143
Prof. Adel Ismail Al-Alawi and Abdullah Ali Alenezi

Drones in Innovative Education: A Systematic Literature Review 152
Prof. Adel Ismail Al-Alawi and Sarah Mousa Alnuwaihedh

The Impact of Educational Big Data, Innovative Learning Environment and Self-efficacy on Academic Performance in Kuwait's Private Higher Education Institutions 161
Prof. Adel Ismail Al-Alawi and Dr. Amani Ahmad Haji Hasan

Culturally and Computationally Adaptive Social Robots for Arabophone Islamic Societies 169
Eiman Tamah Al-Shammari

OCT-CAD: An Automated Deep Learning Diagnostic Tool for Eye Diseases from Imbalanced OCT Scans 175
Saji Alaa, Noureldin Elmadany and Heba Shaban

Evaluation of secure email awareness: A Case Study 181
Resala Aladraj

Enhanced POSIT Constant Multiplier Implementation using FPGA 187
Sahab Alajmi, Sa'Ed Abed and Imtiaz Ahmad

Proactive Detection of Zero-Day Vulnerabilities in Industrial Control Systems through Baseline Configuration Monitoring 193
Yahya Alali and Wasan Awad

Impact of Social Engineering on Social Media Users 197
Amir Abdulhameed Alameeri and Mohamed Basel Almourad

Developing a Framework for Using Large Language Models for Viva Assessments in Higher Education 202
Sara Alaswad, Tatiana Kalganova and Wasan Awad

Generating Questions Bank for Adaptive Assessment Using Machine Learning Techniques: Review 209
Noora Albalushi and Wasan Awad

Generating Questions Bank for Adaptive Assessment Using Machine Learning Techniques 214
Noora Albalushi and Wasan Awad

Systematic Literature Review of Adopting AI Robots in the UAE Judicial System 220
Nawal Albanna, Sondos Alshamsi and Mohamed Basel Almourad

Identifying and Resolving Cybersecurity Challenges in the IoT in Saudi Arabian Startups Using Blockchain Technology 227
Safar Albaqami, Maziar Nekovee and Imran Khan

Enhancing Robustness of Fruit and Vegetable Image Classification Against Adversarial Attacks through Defensive Strategies 240
Dhuha Alferidah, Abdullah Algosaibi, Abdulelah Algosaibi, Alaa Sagheer and Ahmed Afifi

Application Layer Security: MQTT perspective with TLS Implementation and Analysis .. 254
Saud Alharbi, David Bell and Wasan Awad

The Role of Artificial Intelligence in Writing Assessment: Learner Perceptions and System Effectiveness 268
Franciskus Antonius Alijoyo, Riyaz Mohammad, Malik Bader Alazzam, P Kavitha, Giftsy Dorcas E and B Kiran Bala

Deep Learning-Driven Cybersecurity Threat Detection and Mitigation in Saudi Arabia Healthcare System 274
Mostafa Aljaramiz, Mehak Khurana, Faiza Aljarameez and Narjes Alnasiry

Multi-Methods Based Proactive Model for Ambulance Passage Clearance During Medical Emergency 279
Narmin Almaarafi and Jenan Moosa

Trends and Future Research of Information Technology in Finance: A Scopus-Based Bibliometric Review 289
Ahmad Bilal Almagribi, Muhammad Erfan, Zuel Fahmi, Abdullah Azzam Bishri, Syauqi Muhammad and Salma Rohadatulaisy Maulana Putri

Automatic Microstructure Image Analysis for Predicting Metals Using Deep Learning 295
Nasser Saleh Almeel and Suresh Subramanian

UniVerse: A Social Platform For University Communities 301
Mustafa Almitamy and Shayma Alkobaisi

A Smart Framework for Optimizing User Feedback Prioritization in Application Development 306
Nuha Almoqren and Mubarak Alrashoud

Zero Trust Security: A Comprehensive Comparative Analysis of Zero Trust Maturity Models 314
Shaikha Alnoaimi and Alauddin Alomary

Predicting supply chain disruptions using Neural Network techniques 322
Fai Alsanea and Suresh Subramanian

JAYA based classifier system for Cybersecurity 327
Wafa Alsharafat and Wesam Alrashdan

Developing a Cloud-based API for Adopting SaaS Microservice Architecture 332
Sayed Mohammed Alwedaei and Jenan Moosa

Privacy-preserving Techniques: A Review 340
Sayed Mohammed Alwedaei and Jenan Moosa

Challenges and Opportunities in AI Integration in Power System Protection 347
Ian B.Benitez, Mark Anthony G.Teodoro and Melodia D.Pahati

Frame-Based Knowledge Representation for Intelligent Tutoring Systems 353
Tina Babu, Rekha R Nair, Ganesh H S, Dhanush G S, Varun A R and Karthik B R

Convolutional Neural Network for facial emotion detection 359
Tina Babu, Rekha R Nair, A G Kavya, Tenzin Sungrab Norbu, Sunil Reddy J and Harsha Vardhan Reddy

Markov Decision Processes In Autonomous Robot Navigation 365
Tina Babu, Rekha R Nair, Vamshi S, Darshan H R and Nithin M

Hybrid Approach: Combining Hill Climbing and Genetic Algorithms for Traveling Salesman Problem 371
Tina Babu, Rekha R Nair, S Sumanth, Ishith T P and Chitra K S

Fuzzy Logic Control System for Smart Home Energy Management 376
Tina Babu, Rekha R Nair, Sunil Sunil, Vinod S Toravi, Praveen Ajjankatti and Darshan R

Human Elements in Phishing Susceptibility: An Assessment within the Kingdom of Bahrain 381
Rashed Bahlool, Sameh Foulad and Sami Dagash

EMDAD: Bridging Farmers and Investors for Sustainable Agricultural Growth 391
Noor Bajunaid, Rahaf Hatrash, Shahad Bahwainy, Raghad Alzahrani, Raghad Ajlan, Hanan Alotaibi and Dania Aljeaid

Transforming Digital Images Into Cartoon Styles Visual Using Convolutional Neural Networks 398
S.P Balakannan, J Jeya A Celin, M Muthu Vijayan, R Harish Krishna, R Sivagurunathan and N Mohan

A Machine Learning Approach to Predict Autism Spectrum Disorder 402
Fatema Baqer and Suresh Subramanian

Shake-to-Alert: An Automated Mobile Safety Application for Women with Emergency Notification via Motion Detection 407
A. Baranidharan, Rajkumar Pandiarajan, S. Arun Shakthi, B. Aakash, K. Prabhakaran and R. Adidya

Innovations in Electrical Engineering Using 3D Printing Technology: A Review 408
Ian Benitez

Text Sentiment Analysis from University Stakeholders feedback: A Comparative Analysis of RNN architectures and Transformer based model 414
Shaneth C. Ambat, Jeneffer A. Sabonsolin and Hadji J. Tejuco

Leveraging Mobile Applications for Social Entrepreneurship: Driving Innovation and Impact in a Digital Era 420
Vishwas Chakranarayan

Emergent Intrusion Detection System for Fog enabled Smart Agriculture Using Federated Learning and Blockchain Technology: A Review 425
Vijayalakshmi Chakravarthy, David Bell and Subhashini Bhaskaran

To Instant of Coffee Beans using K-nearest Algorithm Over Clustering for Quality and Sorting Process 432
B. Chandu, Surendran R and Raveena Selvanarayanan

Enhancing Yoga Pose Recognition using Large Language Models with Real-World Dataset Integration for Personalized Fitness Assistance 439
Sravan Kumar Chittimalla and Leela Krishna M Potluri

Prediction of Osteosarcoma Bone Cancer Using Convolutional Neural Networks and Multi-Feature Integration Methods 444
P Divya, A Chandrasekar and S Raghavi

Streamflow Prediction of Cañas River Watershed, Cavite, Philippines using Long Short-Term Memory 450
Jose Carlo Dizon, Insaf Aryal and Ian Benitez

Exercise Recognition and Analysis for Improved Fitness Tracking Using Machine Learning 456
Ramez Farouk, Ziad Othman, Abdullah Aga, Rojina Mahmoud and Noureldin Elmadany

Monitoring Incident Response Using Real-Time Analytics 461
Mohanraj G, Nadesh R K, V Sathiyamoorthi and Adityan S

Financial Anomalies in Bank Subscriptions: Machine Learning and Bayesian Optimization for Term Deposit Analysis 468
Ansh Grover, Nikhil Jain, Manognya Agnihotri, Rithani Priyankaa S R, Tella Divya Sree, Anil Jadhav and Jehad Al Dallal

Improving Fire Type Classification in Bahrain Using Supervised Machine Learning Techniques 474
Isra Hamidullah, Mariam Abdulsamad, Maryam Almeer, Ranyah Taha and Yasmina Tammam

Forecasting Methane Emissions in Kuwait by 2030: A Time Series Approach Using ARIMA 481
Aouatef Hellal, Jehad Al Dallal and Messaoud Djeddou

AffordaMatch AI: Using Dynamic Mobility & Pricing Optimization for Affordable Transportation. 486
S Hemaswathi, Kailasam Selvaraj, P Rajkumar, P.K Sanjeev Kumar, M Hemachandravijay, L Sathyaseelan and L Surender

Holistic Evaluation of UFMC, FBMC, and F-OFDM Modulation Schemes for Enhanced Spectral Efficiency in 5G Communication Networks 491
Asif Hussain Shaik, Shaik Karimullah, Mudassir Khan, Fahimuddin Shaik and Syed Javeed Basha

Transformational Leadership Style and Knowledge Management Role and Their Influence on Innovation 496
Adel Ismail Al-Alawi and Fadheela Mohammed Habeeb

Integration of a Hybrid Model with XAI for Stock price Forecasting: A Dashboard-Driven Approach 502
Jagannathan J and Veera Venkata Shivamani Krishna Goditi

Collaboration Of AI With Project Management 507
Jagannathan J, Kanishka S and Thanushree S

Air Quality Analysis: A Data-Driven Study of Indian Cities 511
J Jagannathan, Shrivarshan N K and Sahana Mahesh

Promoting Constructive Online Debates Through Harmful Comment Classifier 517
Jeevanandam Jotheeswaran, Geetha V, Iyyappan M and Srinivasa K.G

Empowering a Nutritional Lifestyle through Soaked and Streamed Nuts Water Reuse using Novel RNN and NLP 523
Lekhya K, Surendran R and Logapriya E

Digital Rupee Acceptance Dynamics through the Lens of Theory of Planned Behaviour . . . 528
Suraj Kamble, Shikha Jain, Rashmy Moray and Jehad Al Dallal

PSL-CFRT: A Benchmark Multi-view Dataset for Continuous Pakistani Sign Language Fingerspelling Recognition and Translation 535
Muhammad Kamran, Mubasher Baig, Mian M. Awais, El-Sayed M. El-Alfy and Adnan Akhunzada

Meta-Learning-Driven QoS Estimation for Self-Optimizing 6G Networks in Stochastic α-η-μ Fading Channels with Multi-Layer Selection Combining and Cross-Layer Interference Adaptation 541
Keshav Kaushik, Priyanka Gaur, Barga Mohammed Mujahid, Mudassir Khan, Elfatih Elmubarak Mustafa and Amrita Singh

Breast Cancer Diagnosis from Histopathological Images Using Deep Neural Networks 547
Shehzad Khalid, Summaya Sohail Chaudry, Muhammad Awais, Muhammad Jalal Haider and Mujtaba Ahmed

A System to Detect Unconscious Bias Using Virtual Patients – System Architecture 553
Mohammad Nasfikur Rahman Khan and Sean Walker

Enhancing Healthcare Accessibility: A RAG-Based Medical Chatbot Using Transformer Models . . . 558
Agrim Kulshreshtha, Aditya Choudhary, Tejas Taneja and Seema Verma

MindMedix: An AI-Powered Platform for Neurological Diagnosis and Personalized Treatment . . . 562
Prince Kumar Prajapati, Madhumita Mahapatra and Preeti Pandey

Trusting Predictions of Acoustic Classification . . . 568
Hubert Kyerematen-Boateng, Darsana Josyula and Marvin Conn

Data-Driven Insights in Real Estate: Property Recommendation System and House Rent Prediction using Machine Learning . . . 573
Thamini Lanjewar, Ashish Kate, Sarvarth Patil, Ishita D., Sreelakshmi K., Anil Jadhav and Jehad Al Dallal

Transforming Education in the Middle East: Leveraging RPA and ML to Enhance Learning and Operational Efficiency . . . 579
Majid Lateef Abdulrazaq, Saadah Hamdi Suwaidan, Haider Abdulkareem Alzuhiry, Saeed Hameed Aldulaimi and Marwan Abdeldayem

Ethical and Legal Perspectives on Digital Telehealth in Genetic Counseling: Navigating Challenges and Opportunities . . . 587
Hagar M. Mohamed and Sally M. Elsayed

Harnessing Renewable Energy Technologies in Biomedical Healthcare: Political Strategies for a Sustainable Future . . . 593
Hagar M. Mohamed and Sally M. Elsayed

The Role of AI in Early Disease Prediction and Medical Outcomes . . . 599
Hagar M. Mohamed and Sally M. Elsayed

AI in Palliative Cancer Care: Legislative Strategies and Regulatory Frameworks . . . 606
Hagar M. Mohamed, Amina Toumi and Sally M. Elsayed

Regulating AI in Occupational Therapy: Governance, Laws, and Policy Implications . . . 613
Hagar M. Mohamed, Amina Toumi and Sally M. Elsayed

Enhancing the Detection of Automated DDoS Attacks Using Advanced Machine Learning Methods . . . 621
Nafiz Mahamud, Md Jamal Uddin and Ummay Sumaiya

End to End Secure Cryptographic System . . . 627
J. Nulyn Punitha Markavathi, Rajkumar Pandiarajan, Alan Shahil F, Sheik Syed Sharmin S, Mano V and Jaya Priyangaa R M

Blood Bank Management System: Enhancing Security and Transparency in Blood Donation . . . 634
J. Nulyn Punitha Markavathi, Rajkumar Pandiarajan, Gurumoorthy S, Madhankumar M, Sharmi V and Priyadharsika J

Enhancing Emergency Blood Supply Chain Management Through a Demand-Driven Mobile Application for Rapid Donor Mobilization . . . 640
V. Maruthupandi, Rajkumar Pandiarajan, Kamaresh E, Bhakathatla Kotesh, Gumma Karthik Reddy and Devarla Tharun Sai

An Efficient Malware Detection in IIoT using Machine Learning Techniques 646
Zahra Masroor and Suresh Subramanian

Oil Volatility Forecasting and Risk Management: A Hybrid Machine Learning Approach .. 654
Mehdi Mili and Yusuf Alaali

Early Stage Detection of Colorectal Cancer using Segmentation of Polyps 660
Syed Muhammad Usman, Yaqoob Ali and Imran Taj

Predicting Air Quality Using Machine Learning: A Comparative Analysis 665
Fuad Musleh, Ranyah Taha and Abdel Rahman Musleh

Propositional Logic for Automated Reasoning in Legal Expert Systems 671
Rekha R Nair, Tina Babu and Pranitha Karanam

Recurrent Neural for Time Series Prediction in Finance 677
Rekha R Nair, Tina Babu and Kishore S

Improving Alpha-Beta Pruning Efficiency in Chess Engines 682
Rekha R Nair, Tina Babu, Kishore S, Pavithra K and Sumana S G

Evolutionary Algorithms for Optimizing Wind Turbine Blade Design 688
Rekha R Nair, Tina Babu, Kishore S and K. Nithin Kumar

NodeMCU-based Smart Car Parking System for Real-Time Monitoring and Efficient Space Utilization 694
Rekha R Nair, Kishore S and Tina Babu

Transfer Learning with ResNet50 for Robust Traffic Sign Recognition: Addressing Challenges in Lighting, Occlusion, and Class Imbalance 700
Rekha R Nair, Kishore S, Tina Babu, Ramamoorthy H and Nandana Santhosh

Exploring ZnAlO Nanoparticles for Wireless Applications: Insights from Sol-Gel Synthesis 706
Lvs Narayana, Ribhu Abhusan Panda and Siragam Srilali

IPL Data Analysis by Web scraping and using PowerBI 710
Mogith P, Mothiswar T B G, Mohammad Abubakar G, Dr.Jagannathan. J and Dr.Balaganesh. N

Determinants of Successful Admission to the Information Systems Program in State Colleges and Universities (SUCs) of the Philippines 717
El Jireh P. Bibangco and Norberto L. Mondero Jr.

Machine Learning for Medical Conditions SMOTE-Based Data Balancing Approach 723
Raj Kumar Pandiarajan, M. Ram Gopal, Dr.Iyyappan Moorthi, J. Akhil Reddy, P. Balaji and P.Sahadev Varma

Applications of Machine Learning in SARS-COV-2 Genomics for Varient Detection and Disease Prediction 728
Rajkumar Pandiarajan and Muthulakshmi G

A Novel Dual-Crossed Deep Learning with An Adaptive Metaheuristic Approach and Improved AlexNet Based Covid-19 Variant Detection 734
Rajkumar Pandiarajan and Muthulakshmi G

Machine Learning for Asthma Prediction: Analyzing Health Data for Early Detection 740
Ts.Dr.Sundresan Perumal, Banu Priya. S and Kumutha Duraisamy

Predicting Co-morbid Chronic Diseases: Hypertension and Diabetes Using Deep Learning 748
Ts.Sundresan Perumal, Kumutha Duraisamy, Divyasree T and V. Dhanalakshmi

Real-Time Plant Disease Detection Using Computer Vision, Machine Learning, and IoT-Integrated Environmental Sensing 749
D Premraja, Rajkumar Pandiarajan, M Sahithi, M Selvamani, M Nikitha and N Shajith Rahman

AI-Driven Nutritional Intelligence: A Predictive Data Analytics Framework for Personalized Dietary Optimization 754
Jayabhaduri R, Prabanjan U V, Sungheetha Akey, Gunashekara Reddy M R, Santhosh G and Yashas M R

Explainable AI Model for Automatic Irrigation System using IOT 760
Rajagopal R, Sumathi D, Akey Sungheetha, Rajesh Sharma R, Sheila Mahapatra and Sivakumar N

AI-Enhanced Cross-Modal Anime Recommendation System with Explainable Deep Learning 766
Jayabhaduri Radhakrishnan, H Naga R. Guna Vardhan, Akey Sungheetha and K. Dinesh Kumar Reddy

Optimizing Defect Detection in Photovoltaic Systems Using Machine Learning Based Approaches 772
Nitu Rana and Shaveta Arora

AI-Infused Smart Application Tracking System for Data-Driven Recruitment 776
Hemaswathi S, Rajkumar Pandiarajan, Logeshwari S, Priya Dharshini M, Lakshmipriya D and Muthuselvi U

Efficient Hashtag Recommender System for Digital Marketing 782
Hawra S.Abdulla and Suresh Subramanian

Predictive Analytics in Customer Relationship Management 789
Emad Sadiq, Hussain Alkarani and Vishwas Chakranarayan

Predicting Cerebral Stroke: Comparison between Anomaly Detection Algorithms and Classification Models 796
Rituparna Sarkar, Vaisali Gupta, Pranjal Gupta, Shantanu Hiwrale, Anish Patil, Anil Jadhav and Jehad Al Dallal

Enhanced Intrusion Detection System for IoMT Devices Using Improved Human Evolutionary Optimization Algorithm and Tabular Transformers 802
Nandita Sengupta, Ramya Chinnasamy and Malliga Subramanian

Real-Time Sentiment Analysis of Customer Feedback Using Neural Networks and NLP Methods 809
N Shaafia Tasneem and Dr. R Hemalatha

A Comparative Analysis of Deep Neural Network Models for Deepfake Image Detection Generated using AI 815
Ruchi Sharma, Tanishka Sharma, Shaveta Arora and Seema Verma

Multi-Task Learning Approach for Simultaneous Prediction of Multiple Comorbidities in Diabetic Patients 820
Nithya Rekha Sivakumar

Grow Pro: A Smart Assistant for Rice Disease Detection and Decision Support Using Deep Learning 825
K Suthendran, Rajkumar Pandirajan, Chandra Kiran E, Balaji D, Sai Chandu K and Sri Ram P

API-GEN: Accelerator Tool for Generation of REST APIs 831
Senthil Kumar T, Jayapradha J, Mardeni Bin Roslee, Hajna Shaik, Sanskriti Garg and Chilakala Sudhamani

Early Detection of Alzheimer's Disease through Speech-Text Analysis: A Review 837
Noor Taher and Jenan Moosa

A Review of AI-Driven Techniques for Power System Insulation Coordination and Surge Protection 843
Mark Anthony Teodoro and Ian Benitez

Harnessing Computational Intelligence: In-Depth Applications in Biology and Medicine .. 849
Amina Toumi, Hagar M. Mohamed and Sally M. Elsayed

Predictive Modeling of Lung Cancer Detection Using Logistic Regression on Liquid Biopsy 855
Baby Shalini V, Rajkumar Pandiarajan, Devetharshana M, Rajalakshmi R, Sakthi Shri T and Assa K.M.

Smart Assistive Stick with Enhanced Mobility and Independence for the Visually Impaired Using Ultrasonic, GPS, and GSM Technologies 861
Maruthupandi V, Rajkumar Pandiarajan, Chellam S, Leena T, Lakshmi Narasimman P and Jasin Joel Raj J

Implications of Advanced Technology on IT Shared Service Centers 867
Hajar Wadaatallah and Elhassan Anas Elsabry

Comprehensive Comparative Assessment of AI driven Adaptive and Risk Based Authentication Strategies in Cloud Computing 874
Anant Wairagade, Ashutosh Ahuja and Nikhil Gupta

AI Based Methods for Insider Threats Detection for Cloud Risk Mitigation 880
Anant Wairagade, Raj Sonani and Vijay Govindarajan

The Social Impact of IoT in Disasters 887
Haoming Xiang and Take Itagaki

The socioeconomic and technological implications of 5G deployment in urban and rural communities of South Africa 894
Khanyisani Khayelihle Xulu and Masike Malatji

Cryptanalysis of the Bluetooth Security Protocol Using Enhanced DNA Sticker Model 900
Basim Yaseen

Digital Twin-Based Smart Building Management System 907
Anwaraly Yasmine Begum, Shaik Mohammad Sahil, Muppala Raj Kumar Raju, Muchakala Sruthi Laya, Derangula Kalyan and Venkata Kamesh