

2025 4th International Conference on Computing, Management and Telecommunications (ComManTel 2025)

**Madrid, Spain
14-17 December 2025**

IEEE Catalog Number: CFP2523T-POD
ISBN: 979-8-3315-6877-1



Copyright © 2025, 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:	CFP2523T-POD
ISBN (Print-On-Demand):	979-8-3315-6877-1
ISBN (Online):	979-8-3315-6876-4

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 Distributed Architecture for Centrality-Based Computation in IoT Networks for Intrusion Detection	1
<i>David Concejal Muñoz, Rafael Pastor Vargas, Antonio Del Corte Valiente</i>	
Text-Based Analysis for Stock Market Prediction: A Scoping Review	9
<i>Mbali Ngobeni, Robert Hans, Dan Masethe, Goboitshepo Leroke</i>	
The Professional Divide in AI Cybersecurity Perceptions: A Quantitative Study of IT and Non-IT Attitudes	16
<i>Shaila Rana, Rhonda Chicone</i>	
Proactive Edge Caching and Beam Management for mmWave Vehicular Networks	20
<i>Adel Aldalbahi</i>	
Stackelberg Security Game with Reinforcement Learning for Defending Video Servers Against APT Attacks	26
<i>Aws Jaber, Giordano Colò, Gudmund Grov, Angel Genchev</i>	
Optimized MMSE-Based Data Detection Scheme for Downlink Orthogonal Time Frequency Space-Sparse Code Multiple Access (OTFS-SCMA) Systems	40
<i>Olutayo O. Oyerinde</i>	
Hybrid Machine Learning and GenAI Approach for Data Loss Prevention	46
<i>Amine Messaoud Nacer, Bassant Selim, Ali Azouz</i>	
AURELIUS: Agentic Uncertainty-Reasoning & Learning with Hierarchical Bayesian Multi-Agents Unified System for Handling Non-Determinism in HealthTech	52
<i>Muthukumarapandian Chandrasekaran</i>	
Machine Learning-Enhanced Finance Dashboard for Realtime Revenue Forecasting in Business Intelligence Applications	58
<i>Henry Ese Ivwighre, Mohammad Ahmad, Mohammad Emad Arafah</i>	
BERT-Driven Intrusion Detection System for 5G Core Security	64
<i>Yathusan Thulasinathan, Glaucio H.S. Carvalho, Isaac Woungang</i>	
A Hybrid Deep Learning Approach for DDoS Attacks Detection in EV Charging Stations	70
<i>Shugofa Hassani, Isaac Woungang, Glaucio H.S. Carvalho, Alagan Anpalagan, Issa Traoré Hafiz Yasir Noor</i>	
Sequential Distillation Based Multi-modal Prompt Learning for Vision Language Models in Wireless Edge Networks	76
<i>Yi-Jing Liu, Longyu Zhou, Yijing Lin, Ruichen Zhang, Xiaoming Yuan, Shuang Qin, Supeng Leng</i>	
From Chatbots to Agentic AI: Digital Agents Transforming FinTech	82
<i>Shadi Alzu'bi, Ala Mughaid</i>	
Openness as a Catalyst for Organisational Capabilities in Digital Trust Assessment: Insights from the Financial Sector	89
<i>Julija Saveljeva, Tatjana Volkova</i>	

Adaptive Neuro-Fuzzy-Based Environment Sensing and Control of a Fogponics System Under Simulated Partial Gravity	93
<i>Newton John Suganob, Ronnie Concepcion</i>	
Exploring LFSR-Based Encryption for DICOM Images	99
<i>Daniel Okunbor</i>	
Privacy-Preserving Intrusion Detection Using Federated Learning and Differential-Privacy-Inspired Noise	106
<i>Zakaria Alomari</i>	
A Modular DTaaS Architecture for Predictive Slice Management in 6G Systems	113
<i>Tuğçe Bilen, Mehmet Ozdem</i>	
Emotionally Intelligent Executive Dashboards: A Framework for Emotion-Aware Business Intelligence in Strategic Decision-Making	119
<i>Omar Alsodi, Mohammad Alhur, Firas Omar, Hanadi Sa'Di</i>	
STAR-RIS-Aided Jamming Mitigation in Downlink MIMO Networks: Passive Vs Active?	125
<i>Radwa Sultan, Ahmed Shamseldeen, Sumit Chakravarty</i>	
Lightweight Real Time Sign Language Recognition Using Custom Dataset	131
<i>Ayesha Siddiqa, Sumera Aslam, Sultan Daud Khan, Adnan Mehdi, Asmamaw Tadege Shiferaw, Habib Ullah</i>	
Building Trust Through Human-AI Teaming for Traversal of Unmanned Ground Vehicle through Mine-laden terrain	137
<i>Nishat Ara Nipa, Mohammed Hamza Chao, Sachin Shetty</i>	
Frontend Development: A Comparative Evaluation of Monolithic, Micro-Frontends, and Multi-Standalone Architectures	144
<i>Nikolaos Zafeiropoulos, Argyro Mavrogiorgou, Athanasios Kiourtis, Dimosthenis Kyriazis</i>	
Adaptive Online Learning for Network Traffic Prediction	150
<i>Alweera Khan, Bassant Selim, Brigitte Jaumard, Jean Michel Sellier</i>	
Generative-AI vs. Traditional Methods for Fake News Detection	158
<i>Ayesha Azam, Farwa Batool, Giuseppe Lo Re, Marco Morana, Muhammad Usman Ghani Khan</i>	
SWIFT is Preparing to add a Blockchain to manage cross border payment settlement process	164
<i>Adderrahmane Aya</i>	
Automated Test Case Generation (ATCG): Leveraging Large Language Models for Software Testing	170
<i>Vasim Shaikh, Vijay Walunj, Amarnath Hanumantharaya, Harsha Vanama</i>	
Engineering a Culture of Wellness: Design and Deployment of a University Wellness Widget	179
<i>Shreyas Ramachandran, Jason Nguyen, Andy Pham, Amy Spagnolo, Margaret Swarbrick, Ryan Janelli Sasan Haghani</i>	
Experimental Evaluation of AI-Based Network Slicing for an XR Platform Leveraging Beyond 5G and Edge Computing	183
<i>Semih Aktas, Semiha Kosu, Gökhan Kalem</i>	
AI-based Environmental Sensing Control Model Enhancing Home Comfort and Energy Consumption	189
<i>Farman Ullah, Ihtesham Jadoon, Hamna Baig, Ejaz Ahmed, Muhammad Bilal Khan</i>	

Compliance-Aware Cross-Border Federated Learning for Security Telemetry under HIPAA/GDPR	197
<i>Nishanth Sirikonda, Bhaskar Bharat Sawant, Jai Janak Vora, Akshay Aggarwal</i>	
Energy-efficient optimization for URLLC services in D2D cellular networks	204
<i>Yarisley Peña Llerena, R. L. Paulo Gondim, Jaime Lloret</i>	
Blockchain-Based Lightweight Authentication Protocol for Secure Drone Communication in Smart Cities	212
<i>Manuela De Jesus Sousa, Paulo Roberto L. Gondim, Jaime Lloret</i>	
Performance Assessment of PLC and Hybrid PLC-VLC Receivers Under Blanking Non-Linearity	220
<i>Irvine Mapfumo</i>	
A Statistical Analysis of Hybrid PLC-VLC Versus PLC Systems Under Impulsive Noise with Blanking Nonlinearity	226
<i>Irvine Mapfumo</i>	
Towards Trustworthy AI in IoT Security with Outlier Guided Multi-Stage Sentiment Analysis	232
<i>Laila Abd-Ellatif, Mohammad Abrar, Alaa Ismaeel</i>	
Enhancing Revenue with Data-Driven Customer Behaviour Analysis in Small Delivery Businesses in Amman	238
<i>Firas Omar, Haneen Amjad, Ahmad Altarawneh</i>	
Artificial Intelligence-Assisted Simulation Framework for Efficiency Enhancement and Optimization in Solar Thermal Systems	244
<i>Reham Alsdua, Omar Alsodi</i>	
Data Governance Framework for Institutional Knowledge Management in Higher Education Libraries: A Case Study of Al-Zaytoonah University Library	248
<i>Mohammad AbdulJawad, Amal Qassed Ahmad, Mohammad Z. Masoud, Hanadi Sa'd</i>	
Fileless Attack Patterns Implemented in Python: Design, Encryption, and Detection Lessons	252
<i>Mohammad Z. Masoud, Mohammd Abduljawad, Husam A. Foudeh, Rashed Alsakarnah</i>	
Engineering Imaging Systems Using AI for Advanced Biotechnological Visualization	258
<i>Gurnoor Singh Dang, Majid Rodgar, Michael Snyder</i>	
An Image Enhancement Framework for Detecting Latent Faults in Smart Sustainable Systems	264
<i>Gurnoor Singh Dang, Majid Rodgar, Michael Snyder</i>	
Advanced Ophthalmic Imaging System for Democratizing Glaucoma Detection	270
<i>Gurnoor Singh Dang, Gloria Wu, Ivan Chim, Swara Tewari, Priyal Badala, Brian Hoang</i>	