ITNAC
INTERNATIONAL TELECOMMUNICATION NETWORKS AND APPLICATIONS CONFERENCE

ITNAC 2026

Conference »Program

2026 IEEE 36th International Telecommunication Networks and Applications Conference (ITNAC) Program

S1: The last paper presentation ends before (10:20) the session end time of 10:30.

S2: The last paper presentation ends before (10:20) the session end time of 10:30.

S4: The last paper presentation extends beyond (15:30) the session end time of 15:00.

S5: The last paper presentation ends before (16:50) the session end time of 17:00.

S6: The last paper presentation ends before (16:50) the session end time of 17:00.

S7: The last paper presentation ends before (10:20) the session end time of 10:45.

S8: The last paper presentation ends before (10:40) the session end time of 10:45.

S10: The last paper presentation extends beyond (13:00) the session end time of 12:30.

S9: The last paper presentation extends beyond (13:00) the session end time of 12:30.

S13: The last paper presentation ends before (16:50) the session end time of 17:00.

S14: The last paper presentation ends before (16:50) the session end time of 17:00.

Tuesday, November 24

Tuesday, November 24 14:30 - 16:30 (Australia/Melbourne)

WR: Welcome Reception

Room: Level 2, The Oxford Scholar (RMIT Building 81)

Join us for the ITNAC 2026 Welcome Reception, a day before the conference officially begins. This is a wonderful opportunity to meet fellow participants and build new connections in a relaxed and friendly atmosphere. Refreshments and drinks will be served.

Wednesday, November 25

Wednesday, November 25 8:30 - 9:00 (Australia/Melbourne)

R1: Registration

Near Room 19 & Room 20, Level 4, RMIT Building 80

Wednesday, November 25 9:00 - 10:30 (Australia/Melbourne)

S1: Session 1: Mobile and Wireless Network

Session Chair: Prof. Djamel Djenouri

Room 19, Level 4, RMIT Building 80

Adaptive-CP Correlation Method for CFO Estimation in 5G NR Systems

Maryam Bacha (Western Sydney University, Australia); Qi Cheng (Western Sydney Unversity, Australia); Ranjith Liyanapathirana (Western Sydney University, Australia)

Risk-Adaptive Secure Slicing: Dynamic Risk Scoring and Collusion-Aware Resource Allocation for B5G Networks

Sameer Ali and Helena Rifà-Pous (Universitat Oberta de Catalunya, Spain)

Hardware Acceleration of Detection Algorithms for Massive MIMO Systems on RISC-V Vector DSPs

Javier Acevedo (Technical Univierstiy of Dresden, Germany); Patrick Seeling (Central Michigan University, USA); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany)

Resilience-Energy Trade-offs in Carrier Messaging Fallback Paths

Srinivasa Chary Maringanti (T-Mobile, USA); Tarun Kundu (Ericsson, USA)

S2: Session 2: Mobile and Wireless Network

Session Chair: Jitendra Kumar Rout

Room 20, Level 4, RMIT Building 80

Unified Host- and Network-Based Mobility across IPv4/IPv6 and NAT Boundaries in CYPHONIC

Mitsuki Sugihara, Kiwame Izumi, Soichiro Kimura and Ryouta Aihata (Aichi Institute of Technology, Japan); Hidekazu Suzuki (Meijo University, Japan); Ayano Naito (Aichi Institute of Technology, Japan)

Sector-Aware Pressure-Guided Adaptive Rendezvous Collection for Periodic Mobile-Sink Data Collection in Wireless Sensor Networks

Beomkyu Suh and Ki-Il Kim (Chungnam National University, Korea (South))

Feasibility Study of a Millimeter-Wave ISAC for Cooperative Helicopter Networks

Kazuyuki Morioka, Akiko Kohmura, Shunichi Futatsumori and Junichi Honda (Electronic Navigation Research Institute, Japan)

Time-varying Channel Estimation with Delay-scale Diversity for Underwater Acoustic Communication

Yue Rong and Peng Chen (Curtin University, Australia)

Wednesday, November 25 10:30 - 11:00 (Australia/Melbourne)

MT1: Morning Tea

Wednesday, November 25 11:00 - 11:45 (Australia/Melbourne)

K1: Opening keynote: Digital manufacturing - Advancing industrial productivity and resilience via digital twins, physical dependency-aware AI, and co-creation with the industry

Session Chair - Himanshu Agrawal

Keynote speaker: Prof. Dimitrios Georgakopoulos (Director, ARC Industrial Transformation Research Hub for Future Digital Manufacturing and Computer Science Professor at Swinburne University of Technology in Melbourne, Australia)

Room 19, Level 4, RMIT Building 80

Digital Manufacturing aims to make the industry more productive, resilient, and globally competitive than ever. To achieve this, we are co-creating with the industry advanced digital twins for effectively representing in the digital word complex physical entities in manufacturing, such as sophisticated industrial machines, materials and products, and people involved in production. To dramatically improve industrial productivity and resilience we devise physical dependency aware AI/ML models that help optimize production outcomes, e.g., by predicting production issues (such as inefficiencies, product inconsistencies, unplanned maintenance issues) and correct them before they occur. In this talk we also discuss ongoing development of a novel digital manufacturing platform that combines the above technologies and reduces the cost and effort of developing digital manufacturing solutions. We present examples of these technologies and related digital manufacturing solutions from over forty projects we have conducted jointly with industry partners in a variety of sectors ranging from food, steel, composites, to tools and vehicles. More importantly, we outline research directions, challenges, and opportunities for digital manufacturing that can transform the industry.

Wednesday, November 25 11:45 - 12:30 (Australia/Melbourne)

K2: Keynote session: Adversarial Time Series Threats in Cyber-Physical Sensor Networks

Session Chair: Himanshu Agrawal

Keynote Speaker: Prof. Salil Kanhere (School of Computer Science and Engineering, The University of New South Wales, Sydney)

Room 19, Level 4, RMIT Building 80

Modern cyber-physical systems and IoT deployments rely on distributed sensor networks, where time-series data increasingly drive automated monitoring, forecasting, and control decisions. Machine learning models operating on these streams are now deeply embedded in networked infrastructure, spanning industrial control, smart cities, healthcare, and critical services. Yet adversarial robustness for such systems remains poorly understood, particularly under the constraints imposed by real-world networks.

This talk will examine adversarial attacks on time-series models deployed in sensor networks from three perspectives that directly reflect operational realities: sparse perturbations that modify only a small fraction of sensor readings, constraint-adhering perturbations that remain physically and statistically consistent across correlated sensors, and streaming attacks that operate under real-time and partial-visibility constraints. Across multiple multi-sensor IoT and industrial datasets, these attacks significantly degrade state-of-the-art models while evading anomaly detection mechanisms commonly used in networked monitoring systems.

We will conclude by discussing the implications of these results for the design of secure, networked sensing infrastructures. The talk highlights why detection alone is insufficient, how inter-sensor dependencies can be exploited rather than protected, and why defending time-series models in cyber-physical systems requires threat models that explicitly account for network topology, temporal dynamics, and online operation.

Wednesday, November 25 12:30 - 13:30 (Australia/Melbourne)

L1: Lunch

Wednesday, November 25 13:30 - 15:00 (Australia/Melbourne)

S3: Session 3: Quantum Network

Session Chair: Ron Addie

Room 19, Level 4, RMIT Building 80

Fidelity-Aware Quantum Network Architecture: Design and Validation of a Five-Layer Protocol Stack

Vivek Shukla and Vineet Kumar Dwivedi (National Institute of Technology, Raipur, India); Chandrashekar Jatoth (National Institute of Technology Raipur, India); Rajesh Doriya (National Institute of Technology, India); Rajkumar Buyya (University of Melbourne, Australia)

An Enhanced Quantum Key Distribution Protocol for Key Generation and Distribution in SCADA-PLC Environments

Vineet Kumar Dwivedi (National Institute of Technology, Raipur, India); Chandrashekar Jatoth (National Institute of Technology Raipur, India); Lokesh Chouhan (NIT Hamirpur, India); Rajkumar Buyya (University of Melbourne, Australia)

Impact of Within-Block Evaluators on Adaptive-Timing Gains in Free-Space Quantum Key Distribution

Ayush Meshram (National Institute of Technology, Raipur, India); Rajesh Doriya (National Institute of Technology, India); Chandrashekar Jatoth and Kapil Kumar Soni (National Institute of Technology Raipur, India)

S4: Session 4: Network Management, Privacy and Security

Session Chair: Madhusanka Liyanage

Room 20, Level 4, RMIT Building 80

Mitigating Data Scarcity in IoT Anomaly Detection: A Comparative Study of GANs-Based Data Augmentation

Christopher Weng Leong Wong, Min Wang, Md. Farhad Hossain and Kumudu S Munasinghe (University of Canberra, Australia)

A Secure and Adaptive Edge-Intelligence Federated Learning Framework for Distributed Healthcare Networks: The CoA Use Case

Shahid Latif (University of the West of England, United Kingdom (Great Britain) & UWE Brsitol, United Kingdom (Great Britain)); Djamel Djenouri (University of the West of England, United Kingdom (Great Britain)); Andrei Puiu and Anamaria Vizitiu (Siemens SRL, Foundational Technologies, Romania)

PentesterAI: A Hierarchical Multi-Agent System for Autonomous Web Penetration Testing

Huda Hadi and Waleed R Shoga (University of Thi-qar, Iraq); Zaidoun Salh (Dhi-Qar Education Directorate, Iraq); Aqeel Sahi, Mohammed Diykh and Shahab Abdulla (University of Southern Queensland, Australia); Sarmad Alkhafaji (University of Thiqar, Iraq)

Performance Analysis of Scrambling Sequence Alternatives for D2R Communications in Outdoor Ambient IoT Networks

Ankit Pattnaik (Indian Institute of Technology, Kharagpur, India); Ch Santosh Reddy (Trinity College Dublin, Ireland); Debarati Sen (Indian Instutute of Technology Kharagpur, India)

Wednesday, November 25 15:00 - 15:30 (Australia/Melbourne)

AT1: Afternoon Tea

Wednesday, November 25 15:30 - 17:00 (Australia/Melbourne)

S5: Session 5: Internet Technologies and Applications

Session Chair: Dibbendu Roy

Room 19, Level 4, RMIT Building 80

DMB Video Quality Improvement Using Advanced Transport Stream Repair

Hans-Juergen Zepernick (Blekinge Institute of Technology, Sweden); Muhammad Imran Iqbal (Axis Communications AB, Sweden); Siamak Khatibi (Blekinge Institute of Technology, Sweden); Trung Q. Duong (Memorial University of Newfoundland, Canada); Momin Jamil (Harman/Becker Automotive Systems GmbH, Germany); Rolf Esslinger (International Conference on Communication and Electronics, Vietnam)

A Pre-Cache Method for QoE Enhancement of Adaptive Bitrate Video and Audio Transmission Over CCN

Mizuki Inui and Toshiro Nunome (Nagoya Institute of Technology, Japan)

AusAlert-Ready: A Reproducible Geospatial Simulation Framework for Geo-Targeted Cell-Broadcast Emergency Alerts

Prabhu Jyot Singh (Churchill Institute of Higher Education, Australia)

An Open-Source SOC Framework for Resource-Constrained Environments with Multi-Sensor Detection and Alert Triage

Sree Siva Velen Ajitha Sathananthan, Sudharshiya Ganesan, Simon Yusuf Enoch and Shahbaz Pervez (Whitecliffe, New Zealand)

S6: Session 6: Mobile and Wireless Network

Session Chair: Zubaida Rehman

Room 20, Level 4, RMIT Building 80

Graph Attention-Driven Proactive Topology Prediction for Multi-Layer 6G NTNs: An Accuracy-Complexity Trade-off Study

Md Abu Baker Siddiki Abir and Mehran Abolhasan (University of Technology Sydney, Australia); Justin Lipman (University of Technology, Sydney (UTS), Australia); Negin Shariati (University of Technology Sydney, Australia)

Evaluating the Need for Machine Learning in LEO Satellite Handover: A Standards-Based Study

Shaif Khan (United Kingdom (Great Britain)); Elango Nagasundaram and Leshan C Uggalla (University of South Wales, United Kingdom (Great Britain))

Expected-Throughput MCS Selection for IEEE 802.11ah: Isolating the Decision Rule in Minstrel-SNN

Suleman Qamar and Mehran Abolhasan (University of Technology Sydney, Australia); Justin Lipman (University of Technology, Sydney (UTS), Australia)

Autonomous Decentralized TRP Group Selection Considering Packet Delay Constraints in Downlink Distributed MIMO System

Naoki Yatabori (Tokyo University of Science, Japan); Satoshi Suyama (NTT DOCOMO, INC, Japan); Satoshi Nagata (NTT DoCoMo, Inc., Japan); Kenichi Higuchi (Tokyo University of Science, Japan)

Thursday, November 26

Thursday, November 26 9:00 - 10:45 (Australia/Melbourne)

S7: Session 7: Wireless Network & Security

Session Chair: Madhusanka Liyanage

Room 19, Level 4, RMIT Building 80

Belief Dynamics and Misinformation on a Social Network: A Tool for Experimentation

Aaron Hunter and Keagan Purtell (BCIT, Canada)

Impact of O-RAN Function Placement on End-to-End Delay and Energy Consumption in Non-Terrestrial Networks

Khushbu Chaudhary (National Institute of Technology Durgapur, India); Nilanjan Biswas (Indian Institute of Technology Kharagpur, India); Aniruddha Chandra and Sanjay Dhar Roy (National Institute of Technology Durgapur, India)

A Standard-Interworking Framework for Context-Aware Risk Assessment in Urban Physical Security

Jiwon Yang (Korea Advanced Institute of Science & Technology, Korea (South)); Jae Young Jang, Hyoeun Seol and Dohui Kwon (Korea Advanced Institute of Science & Technology (KAIST), Korea (South)); Dongsik Choi (Daejeon Institute, Korea (South)); Hyo Chang Cheon (CUDO Communication, Korea (South)); Gisung Han (Korea Advanced Institute of Science and Technology, Korea (South)); Seung Hyun Cha (Korea Advanced Institute of Science & Technology (KAIST), Korea (South))

Deterministic Structural and Semantic Transformation for Heterogeneous IoT Forensic Evidence

Ravi Chaudhary (Curtin University of Technology, Australia); Nasim Ferdosian and Reza Ryan (Curtin University, Australia); Nickson M. Karie (Australia)

S8: Session 8: General

Session Chair: Keshav Sood

Room 20, Level 4, RMIT Building 80

Privacy-Preserving Federated Learning for UDN-IoT: A Framework for Sliced Topologies, Security Hurdles, and Open Opportunities

Atul Mahajan (Sardar Beant Singh State University, India); Keshav Sood (Deakin University, Melbourne Australia, Australia); Kallol Krishna Karmakar and Mohammad Reza Nosouhi (Deakin University, Australia); Jaswinder Singh (Sardar Beant Singh State University, India)

Saarthi: An End-to-End Intelligent Platform for Optimising Distributed Serverless Workloads

Siddharth Agarwal, Maria Rodriguez Read and Rajkumar Buyya (University of Melbourne, Australia)

T-E2CoPre: Tactical and Energy-Efficient Cooperative Collision Avoidance for UAV Swarms by Dynamic Group Splitting and AI Surrogate Optimization

Ajay Mehra and Nandini Gupta (Indian Institute of Technology, Kharagpur, India); Debarati Sen (Indian Instutute of Technology Kharagpur, India); Chirag Gupta (North Eastern Space Applications Centre, India)

STAR-RIS-Enabled UAV Wireless System Under Alpha-Mu Fading: A Random Spatial Mobility Analysis

Boddu Benzonathan (National Institute of Technology Silchar, India); Purnendu Karmakar (The LNM Institute of Information Technology, India); Sucharita Chakraborty (National Institute of Technology Silchar, India); Wasim Arif (NIT Silchar, India)

From Device Growth to Scalability Frontier: Characterising Private 5G via Digital Twin Fidelity

Md Mashiur Rahman, Prem Prakash Jayaraman and Jiong Jin (Swinburne University of Technology, Australia); Suresh Palanisamy (Swinbourne University of Technology, Australia); Asif Ahmed Sardar (Curtin University, Australia); Steve van Winckel (Sutton Tools Pty Ltd, Australia)

Thursday, November 26 10:45 - 11:15 (Australia/Melbourne)

MT2: Morning Tea

Thursday, November 26 11:15 - 12:00 (Australia/Melbourne)

K3: Keynote session: AI for Wi-Fi and Wi-Fi for AI

Session Chair: Himanshu Agrawal

Keynote Speaker: Mark Krischer (Principal Wireless Architect, Cisco)

Room 19, Level 4, RMIT Building 80

Artificial Intelligence and Machine Learning are drastically changing the way we live, work, play and learn. As IEEE 802.11bn-what will eventually become Wi-Fi 8-nears completion, various IEEE 802.11 study groups and standing committees are already exploring ideas around the next wireless standard and AI is expected to play a major role.

AI has the potential to help solve many existing challenges for wireless networks such as reducing co-channel interference, improving channel access and enhancing security. And as AI workloads move to the edge, there is also a need to improve how wireless networks can support their specific requirements, such as even faster and more seamless roaming, further reducing latency to better support time sensitive networking, and leveraging multi-AP coordination across disparate networks.

This session will explore the requirements to solve both sides of the equation-AI for Wi-Fi and Wi-Fi for AI-with the aim to explore potential avenues of research.

Thursday, November 26 12:00 - 12:45 (Australia/Melbourne)

K4: Keynote session: Securing the Intelligent 6G Era: From AI-Driven Threats to Autonomous Resilience

Session Chair: Himanshu Agrawal

Keynote Speaker: Prof. Madhusanka Liyanage (Ad Astra Fellow at the School of Computer Science, University College Dublin (UCD), Ireland)

Room 19, Level 4, RMIT Building 80

6G is expected to become the first truly AI-native communication ecosystem, where intelligence is deeply embedded into network design, management, orchestration and service delivery. While this transformation will unlock unprecedented levels of automation, adaptability and eBiciency, it will also expand the cyber threat landscape. Future 6G infrastructures will need to defend not only the network itself, but also the AI models, data pipelines and decision-making mechanisms that increasingly drive network operations. This keynote explores the emerging security challenges of the intelligent 6G era and argues that security must evolve from reactive protection to secure-by-design, autonomous and resilient-by-design architectures. It will discuss how AI can strengthen 6G security through anomaly detection, intrusion detection, threat intelligence, adaptive defence and automated response, while also examining the new vulnerabilities introduced by AI-driven systems, including adversarial manipulation, poisoning attacks, model inversion, model theft and trustworthiness concerns. The keynote will further highlight the need for autonomous cyber resilience in 6G, where networks are expected to anticipate threats, maintain critical services under attack or failure, recover rapidly from disruptions, and continuously adapt to dynamic operating conditions. In this context, explainable AI, trustworthy orchestration, zero-trust security models, distributed threat intelligence, and cross-domain resilience mechanisms will play a central role in building dependable 6G infrastructures. Aligned with the broader vision of European 6G-SNS projects, this keynote will present a forward-looking perspective on how intelligence, security and resilience must be co-designed to support trustworthy future networks. The talk will conclude by outlining key research directions toward self-defending, explainable and resilient 6G systems capable of securing both the network and the intelligence embedded within it.

Thursday, November 26 12:45 - 13:30 (Australia/Melbourne)

L2: Lunch

Thursday, November 26 13:45 - 17:45 (Australia/Melbourne)

T1: Conference Tour to Royal Botanical Garden

The ITNAC 2026 Conference Tour offers a wonderful opportunity for participants to unwind, explore Melbourne's natural beauty, and strengthen professional connections in a relaxed and friendly setting.

The tour will depart from RMIT University at 2:00 PM, taking participants to the beautiful Royal Botanic Gardens Melbourne, located close to the CBD. Enjoy a leisurely stroll through the picturesque gardens, engage in informal discussions with fellow researchers and industry professionals, and relax over afternoon coffee.

We will return to RMIT by 5:45 PM, allowing participants time to prepare for the Conference Banquet Dinner at 6:30 PM.

Thursday, November 26 18:30 - 22:00 (Australia/Melbourne)

D1: Conference Dinner

Location details to be announced.

Programme

6:30 PM - Welcome Drinks and Networking

7:30 PM - Banquet Dinner Begins

8:00 PM - Student Awards and Travel Grant Presentations

9:00 PM - Dessert

10 PM - Conclusion of the Evening

Friday, November 27

Friday, November 27 9:00 - 9:45 (Australia/Melbourne)

K5: Keynote session: The Evolution of In-Premise Networks in the Era of Immersive Services: From Copper to Fiber-to-The Room

Session Chair: Himanshu Agrawal

Keynote Speaker: Professor Elaine Wong (Pro Vice-Chancellor (People & Equity) and Redmond Barry Distinguished Professor, University of Melbourne, Australia)

Room 19, Level 4, RMIT Building 80

The telecommunications industry is transitioning towards an experience-driven era, shaped by immersive and interactive applications that place increasingly stringent demands on network performance. Over the past two and a half decades, passive optical network (PON) based Fiber-To-The-Home (FTTH) networks have been central to delivering high-capacity broadband access to homes and businesses. However, the growing performance gap between the access and in-premise indoor networks creates an impetus for driving fiber into home and buildings. Complementing rather than replacing copper cabling solutions and wireless access technologies, e.g. WiFi, the Fiber-to-the-Room (FTTR) solution is set to accelerate over the next few years. This plenary talk examines the immersive applications, in particular the multi-modal traffic characteristics of collaborative extended reality (XR), its Quality-of-Experience (QoE) requirements, corresponding implications on network performance along with emerging solutions including robust resource allocation aimed at meeting QoE requirements.

Friday, November 27 9:45 - 10:30 (Australia/Melbourne)

K6: Keynote session: When Artificial Intelligence Meets the Internet of Things: Motivations, Challenges, and Applications

Session Chair: Himanshu Agrawal

Keynote Speaker: Prof. Wei Xiang (Cisco Research Chair of AI and IoT, Director & Chief Scientist of the Australian Centre for AI in Medical Innovation and Director of the Cisco-La Trobe Centre for AI and IoT at La Trobe University)

Room 19, Level 4, RMIT Building 80

Artificial Intelligence of Things (AIoT) is a newly emerging technology that combines IoT and AI technologies to enable decision making and analytics at IoT devices. IoT enables networks of physical objects that are equipped with sensors, software, and other technologies to exchange data with other devices and systems over the internet, while AI enables data analytics and automated decision making. This talk will start with the motivations of combining AI and IoT technologies as well as the associated challenges. Then Prof. Wei Xiang will talk about his experience in setting up Australia's first accredited IoT Engineering program at James Cook University, as well as establishing Australia's only industry-sponsored research centre that specialises in synergizing between AI and IoT technologies at La Trobe University. Before concluding the talk, Prof. Wei Xiang will talk about a wide range of applications and use cases his AIoT Centre has been working on in Australia.

Friday, November 27 10:30 - 11:00 (Australia/Melbourne)

MT3: Morning Tea

Friday, November 27 11:00 - 12:30 (Australia/Melbourne)

S10: Session 10: Mobile and Wireless Network

Session Chair: Philip Branch

Room 20, Level 4, RMIT Building 80

Fundamental Limits of 1-bit ISAC Systems: Capacity Region and Optimal Power Control

Emmanuel Trinidad (University of the Philippines Diliman, Philippines & Pampanga State University, Philippines); Neil Irwin Bernardo (University of the Philippines Diliman, Philippines)

Finite-Register Powered Quantum Eigenvalue Estimation for ISAC Covariance Sensing

Kaushik Das (Indian Institute of Technology Kharagpur, India); Amit Dutta (Indian Institute of Technology, Kharagpur, India)

Koopman-Predictive Coefficient Tracking for Vehicle-Mounted Monostatic ISAC

Anh Tuyen Le, Xiaojing Huang and Y. Jay Guo (University of Technology Sydney, Australia)

Optimisation of UAV-Enabled ISAC Systems for Livestock Monitoring

Oluwaseun Odusole and Awanthi Jayasundara (University College Dublin, Ireland); Engin Zeydan (CTTC, Spain); Madhusanka Liyanage and Pasika Ranaweera (University College Dublin, Ireland)

S9: Session 9: Network Management, Privacy and Security

Session Chair: Keshav Sood

Room 19, Level 4, RMIT Building 80

Certnet: Media Certification via Mutual Remote Hardware-Attestation

Kaled Aljebur and Ron G. Addie (University of Southern Queensland, Australia)

Service Monitoring Infrastructure in a Privacy-Centric Information Platform

Kosuke Mori and Toshio Hirotsu (Hosei University, Japan)

BlockTwinRobot: A Blockchain Integrated Digital Twin Framework For Secure Verification and Audit of Industrial Robotic Arms

Gimnath Yasitha Piyapema (University of Moratuwa, Sri Lanka); Engin Zeydan (CTTC, Spain); Madhusanka Liyanage (University College Dublin, Ireland); Kasun T. Hemachandra (University of Moratuwa, Sri Lanka); Pasika Ranaweera (University College Dublin, Ireland)

Volatility-Aware Adaptive Hysteresis for AI-Driven Hybrid Routing in Secure Edge-IoT Networks
Hung Quy Tran and James Jin Kang (RMIT University Vietnam, Vietnam)

Friday, November 27 12:30 - 13:30 (Australia/Melbourne)

L3: Lunch

Friday, November 27 13:30 - 15:00 (Australia/Melbourne)

S11: Session 11: Quantum Network

Session Chair: Ron Addie
Room 19, Level 4, RMIT Building 80

Achievable Rate Region Optimization of Quantum Multiple-Access Channels under Decoherence Using Particle Swarm Optimization
Soheil Azadinia (Ferdowsi University of Mashhad, Iran); Ghosheh Abed Hodtani (Ferdowsi University of Mashhad, Mashhad, Iran)

A Transparent Quantum Key Distribution on Midhaul of virtualized Radio Access Network
Majid K (IITDhArwad, India); Chandrashekar Jatoth (National Institute of Technology Raipur, India); Emilio Paolini and Luca Valcarenghi (Scuola Superiore Sant'Anna, Italy); Koteswararao Kondepu (Indian Institute of Technology Dharwad, India)

FPGA-implementation of enhanced BBHT algorithm for multi-user detection
Muhammad Idham Habibie (TU Dresden, Germany); Moritz Reichel and Bassem Arar (Technische Universität Dresden, Germany); Ashwin Raju (Tu dresden, Germany); Riccardo Bassoli (Technische Universität Dresden, Germany); Frank H.P. Fitzek (Technische Universität Dresden & ComNets - Communication Networks Group, Germany); Veluthedathu Valappil Arfitha (Indian Institute of Technology, Kharagpur, India)

S12: Session 12: Network Management, Privacy and Security

Session Chair: Chandrasekhar Jatoth
Room 20, Level 4, RMIT Building 80

Hardware-Rooted Mutual Attestation for Mobile E-Voting Systems
Kaled Aljebur and Ron G. Addie (University of Southern Queensland, Australia)

Cyber-Resilient Recovery Architecture for Power-Utility Communication Networks Using High-Voltage Power Line Carrier Communication
Anton G. Merkulov (Kazakhstan)

Evaluation of GPS Spoofing Attacks on Autonomous Vehicles
Md. Ibnul Bin Kader Arnub, Arman Khouzani and Ian Welch (Victoria University of Wellington, New Zealand)

Autonomous Security Management via Agentic Service Function Chaining in Next-gen Networks
Visal Dam and Uday Tupakula (University of New England, Australia); Kallol Krishna Karmakar (Deakin University, Australia); Vijay Varadharajan (The University of Newcastle, Australia)

Friday, November 27 15:00 - 15:30 (Australia/Melbourne)

AT3: Afternoon Tea

Friday, November 27 15:30 - 17:00 (Australia/Melbourne)

S13: Session 13: Internet Technologies and Applications

Session Chair: Estrid He

Room 19, Level 4, RMIT Building 80

Spatial Adaptive MIMO Free Space Optical Communications with Dynamic M-QAM

Sabai Phuchortham and Hakilo Sabit (Auckland University of Technology, New Zealand)

Explainable Multi-Agent Deep Reinforcement Learning for Partial Computation Offloading in Multi-Access Edge Computing

Samarakoon Mudiyanselage Rasini Pamoda Amarasooriya (RMIT, Australia); Mark A. Gregory and Shuo Li (RMIT University, Australia)

CEO: Crow Search-Based Efficient Computational Offloading in Mobile Edge Computing

Ananya Pandey (National Institute of Technology Raipur, India); Chittaranjan Swain (Atal Bihari Vajpayee-IIITM Gwalior, India & Gwalior, India); Jitendra Kumar Rout and Deepak Singh (National Institute of Technology Raipur, India)

Physics-of-Failure-Guided Run-to-Failure Predictive Maintenance Dataset Generation and Analysis for Network Interface Cards

Md. Farhad Hossain, Nishant Jagannath and Md Ershadul Haque (University of Canberra, Australia); Morshed Khaled (Defence Science and Technology Group, Australia); Mahbub Hassan (University of New South Wales, Australia); Abbas Jamalipour (School of Electrical and Computer Engineering, University of Sydney, Australia & Graduate School of Information Sciences, Tohoku University, Japan); Kumudu S Munasinghe (University of Canberra, Australia)

S14: Session 14: Mobile and Wireless Network

Session Chair: Philip Branch

Room 20, Level 4, RMIT Building 80

Pilot-Sparse Beam Tracking for Near-Field THz Subband Systems via Passive Subcarrier Sensing

Saptarshi Mandal (Indian Institute of Technology, Kharagpur, India); Susmita Saha (IIT Kharagpur, India); Amit Dutta and Goutam Das (Indian Institute of Technology, Kharagpur, India); Himanshu Agrawal (Curtin University, Australia)

LLM-Based Policy Imitation for Interpretable PRB Allocation in RAN Slicing

Dibbendu Roy (IIT Kharagpur, India); Shubham Sinha (Indian Institute Of Technology, India)

A Graph-Theoretic Framework for Characterizing Attack Propagation in O-RAN

Avigyan Samanta and Kaushik Das (Indian Institute of Technology Kharagpur, India); Himanshu Agrawal (Curtin University, Australia); Aneek Adhya (Indian Institute of Technology Kharagpur, India)

Closing the Mean-Tail Gap: A Counterfactual Scheduler Selection for XR in 5G NR

Rahul Kushwah and Dibbendu Roy (IIT Kharagpur, India); Akhilesh Patel (IIT KANPUR Uttar Pradesh, India); Achal Waypankar (India)

Friday, November 27 17:00 - 17:15 (Australia/Melbourne)

CR: Closing Remarks

ITNAC 2027 is in Sydney, Australia

Himanshu Agrawal, General Chair, Curtin University

Room 19, Level 4, RMIT Building 80

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