

9th IEEE International Conference on Industrial Cyber-Physical Systems

ICPS 2026

11 - 14 May 2026
Perth, Australia

Conference Program



ICPS 2026



Organised by IEEE Industrial Electronics Society
Murdoch University, Perth, Australia

WELCOME FROM GENERAL CHAIRS

Welcome to ICPS 2026!

Dear Esteemed Delegates and Friends,

We are delighted to welcome you to the 2026 IEEE 9th International Conference on Industrial Cyber-Physical Systems (ICPS 2026), held on 11-14 May 2026 in Perth, Western Australia. It is our great honour to host you at this important international event.

Perth, the capital city of Western Australia, is a dynamic hub for energy, resources, and advanced engineering innovation. With strong links to industry and technology, it provides an excellent environment for academic exchange, professional networking, and international collaboration in cyber-physical systems.

ICPS 2026 continues the strong tradition of the IEEE International Conference on Industrial Cyber-Physical Systems as a premier forum for researchers, engineers, industry practitioners, and students to exchange and present the latest advances in industrial cyber-physical systems. The conference covers a wide range of topics, including system architectures, modelling and control, artificial intelligence, digital transformation, industrial applications, and energy-related cyber-physical systems.

This year's program has been carefully curated to promote knowledge sharing, technical discussion, and collaboration across academia and industry. We are honoured to feature distinguished keynote speakers, along with a diverse technical program comprising regular tracks, special sessions, tutorials, industry forums and emerging research topics in cyber-physical systems.

ICPS 2026 has attracted high-quality contributions from researchers and practitioners around the world. Each submission underwent a rigorous peer-review process coordinated by the Technical Program Committee, with three independent reviewers. The accepted papers will be presented across technical sessions, reflecting the breadth, depth, and growing impact of the ICPS research community.

We sincerely appreciate the invaluable support and efforts the Conference Organizing Committee, Technical Program Committee, Track Chairs, Special Session Organizers, Reviewers, Sponsors, and all contributors. Their dedication, professionalism, and continued support have been essential in shaping ICPS 2026 and making this conference possible.

We look forward to a productive, inspiring, and memorable conference, and to celebrating the 2026 IEEE 9th International Conference on Industrial Cyber-Physical Systems with all of you. We wish you a productive conference and an enjoyable stay in Perth.

Kind regards,



Hai Wang,

Armando Walter Colombo,

Fang Fang

Conference General Chairs, ICPS 2026

ICPS 2026 ORGANIZING COMMITTEE

Honorary Chairs:

- Okyay Kaynak (TR/CN)
- Ren C. Luo (TW)
- Robert Harrison (UK)
- Xinghuo Yu (AU)
- Yang Shi (CA)
- Milos Manic (USA)
- Juan José Rodríguez-Andina (ES)
- Tharam Dillon (AU)

Conference General Chair:

- Hai Wang (AU)
- Armando Walter Colombo (DE)
- Fang Fang (CN)

Technical Program Chairs:

- Ya-Jun Pan (CA)
- Amirmehdi Yazdani (AU)
- Huiping Li (CN)
- William Dai (CN)
- Huazhen Fang (US)
- Ching-Ming Lai (CN)

Publication Chairs:

- Jiajia Yang (AU)
- Elizabeth Chang (AU)
- Baolin Zhang (CN)

Publicity Chairs:

- Farhad Shahnian (AU)
- Xiangyu Wang (CN)

Special Session Chairs:

- Yu Liu (CN)
- Wei Peng (AU)
- Shuiqing Xu (CN)

Tutorial Chairs:

- Boda Ning (NZ)
- Shuping He (CN)

Industry Forum Chairs:

- Travis Woodward (AU)
- Martin Anda (AU)
- Moayed Moghbel (AU)

Financial Chairs:

- Farhad Shahnian (AU)
- Peter Palensky (NL)

Local Arrangement Chairs:

- Sheikh Azid (AU)
- Yinan Wang (AU)



ICPS 2026 Program Overview

| | Monday,11 May | Tuesday,12 May | Wednesday,13 May | Thursday,14 May | |
|---------------|---------------|---------------------|---|------------------------|------------------------|
| 08:00 - 08:30 | | | | | |
| 08:30 - 09:00 | | | | | |
| 09:00 - 09:30 | | Opening Ceremony | Keynote Speech-2 | Keynote Speech-3 | |
| 09:30 - 10:00 | | Keynote Speech-1 | | | |
| 10:00 - 10:30 | | | Coffee Break | Coffee Break | |
| 10:30 - 11:00 | | Coffee Break | | | |
| 11:00 - 11:30 | | Paper Session 1,2,3 | Paper Session 7,8,9 | Industry Forum 3 | |
| 11:30 - 12:00 | | | | | |
| 12:00 - 12:30 | | | | | |
| 12:30 - 13:00 | | Lunch | Lunch | Lunch | |
| 13:00 - 13:30 | | | | | |
| 13:30 - 14:00 | | | | | |
| 14:00 - 14:30 | | | Industry Forum 1 | Industry Forum 2 | Paper Session 13,14,15 |
| 14:30 - 15:00 | | Tutorial 1 | Site Registration | | |
| 15:00 - 15:30 | | | | Coffee Break | Coffee Break |
| 15:30 - 16:00 | Coffee Break | Paper Session 4,5,6 | | Paper Session 10,11,12 | Closing Ceremony |
| 16:00 - 16:30 | Tutorial 2 | | | | |
| 16:30 - 17:00 | | | | | |
| 17:00 - 17:30 | | | | | |
| 17:30 - 18:00 | | | | | |
| 18:00 - 18:30 | | | | | |
| 18:30 - 19:00 | | | Conference Gala Dinner & Award Ceremony | | |
| 19:00 - 19:30 | | | (The Student Hub 430) | | |
| 19:30 - 20:00 | | | | | |
| 20:00 - 20:30 | | | | | |
| 20:30 - 21:00 | | | | | |
| 21:00 - 21:30 | | | | | |
| 21:30 - 22:00 | | | | | |

* Registration desk is open all day during the event.

** **Internet** is available at the Conference Venue, Murdoch University, Perth, Australia

AGENDA

| MONDAY, 11 May | | |
|----------------|--|--|
| TIME | ACTIVITY | VENUE |
| | Tutorials | |
| 14:30 – 15:30 | Tutorial 1: AI based control and monitoring for the modern aviation and traction systems <i>Presenter: Tianhao Qie, City University of Hong Kong</i> | 360.3.055A |
| 16:00 – 17:00 | Tutorial 2: Harvesting Ambient Energy Toward Self-powered IoT Systems <i>Presenter: Junrui Liang, ShanghaiTech University</i> | 360.3.055A |
| 14:30 – 17:00 | Site Registration | 360.3.Conference+Events Centre (South Side Foyer) |



Building 360.3. Conference + Events Centre (South Side of the Building)

Tutorial - 1

AI based control and monitoring for the modern aviation and traction systems

14:30-15:30 | Monday, 11 MAY, Room 360.3.055A

Abstract: This tutorial introduces AI-enabled control and health monitoring techniques for aviation and traction power electronic systems, where fast dynamics, strong disturbances, and limited onboard resources challenge conventional approaches. It presents online learning-based control frameworks with guaranteed stability, alongside data-efficient monitoring methods for critical components such as DC-link capacitors and power devices. Practical converter-level examples illustrate how adaptive, low-cost solutions can be deployed in safety-critical, embedded traction and aircraft power systems.



Tianhao Qie (M'23, S'17) received the B.E. degree in automation from Southwest University, Chongqing, China, in 2020, and the M.E. and Ph.D. degrees in electrical and electronic engineering from The University of Western Australia, Perth, WA, Australia, in 2021 and 2025, respectively.

Recently, he joined the City University of Hong Kong, Hong Kong, as a Post-Doctoral Fellow. His research interests are advanced control algorithms, power electronics converters, and microgrids.

Tutorial - 2

Harvesting Ambient Energy Toward Self-powered IoT Systems

16:00-17:00 | Monday, 11 MAY, Room 360.3.055A

Abstract: Energy harvesting (EH) is an emerging solution that captures ambient energy from the surrounding environment to power battery-free electronics, enabling maintenance-free and eco-friendly Internet of Things (IoT) applications. A critical component in EH systems is the power conditioning circuit, which interfaces with upstream micro/nano power generators and delivers regulated power to downstream embedded digital devices. This tutorial provides a comprehensive overview of the physical principles, historical developments, and latest advancements in switched-mode power conditioning circuits for EH devices, in particular, kinetic energy sources. The discussion focuses on electromechanical dynamic interactions, power enhancement circuits, and self-powered solutions, all aimed at improving the understanding, implementation, and performance of upstream power interfaces. Special attention is also given to the energy buffer-release mechanism, which ensures stable and reliable energy supply for downstream electronics. Beyond technical details, the speaker will explore challenges and opportunities in the technology translation of battery-free IoT solutions, highlighting a clear path toward scalable and practical real-world applications.



Dr. Junrui Liang is an Associate Professor at the School of Information Science and Technology, ShanghaiTech University, China. He received his Ph.D. in Mechanical and Automation Engineering from The Chinese University of Hong Kong in 2010. His interdisciplinary research spans power electronics, Internet of Things systems, and mechatronics. As of May 2026, he has authored and co-authored over 200 peer-reviewed journal and conference papers. He has been recognized as one of the world's top 2% scientists by Stanford University and Elsevier since 2020. Dr. Liang currently serves as Associate Editor for Journal of Intelligent Material Systems and Structures and IEEE CASS Newsletters.

He is the Past-Chair of the Energy Harvesting Technical Committee (EHTC) in the ASME SMASIS Division, and Chair-Elect of the Power and Energy Circuits and Systems (PECAS) Technical Committee in IEEE CASS. Dr. Liang is an ASME Fellow and an IEEE CASS Distinguished Lecturer (2025-2026).

AGENDA

TUESDAY, 12 May

| TIME | ACTIVITY | VENUE |
|------------------------|--|---------------------------------------|
| 09:00 - 09:30 | Opening Ceremony | 360.4.031 |
| 09:30 - 10:30 | Keynote Speech 1 | 360.4.031 |
| 10:30 - 11:00 | Coffee Break | 360.3. Conference Events Centre |
| 11:00 - 12:00 | Paper Sessions 1,2, 3 | |
| | <ul style="list-style-type: none"> ● ICPS Theory and Technologies, ● ICPS Advanced Modelling, Control, and Optimization | 360.3.011 360.3.055A 360.3.055B |
| 12:00 - 13:30 | Lunch | 360.3. Conference Events Centre |
| 13:30 - 15:00 | Industry Forum 1 on Industrial Digitalisation and Cybersecurity | 360.3.011 |
| | <ul style="list-style-type: none"> ● Industrial automation technologies, digitalisation and cybersecurity in Western Australia ● Digital Transformation and Industrial Innovation in Energy Systems: Insights from Western Australia | 360.3.011 |
| 15:00 - 15:30 | Coffee Break | 360.3. Conference Events Centre |
| 15:30 - 17:00 | Oral Presentations 4, 5, 6 | |
| | <ul style="list-style-type: none"> ● ICPS Energy, ● Special Session on Advanced Control, Monitoring and Industrial Applications of Power Electronic Systems, ● ICPS Architectures & Engineering | 360.3.011 360.3.055A 360.3.055B |
| Virtual Session Link 1 | https://teams.microsoft.com/meet/48339986111694?p=z7qkbl5B5MYDL6KXpp | 360.4.031 360.3.011 |
| Virtual Session Link 2 | https://teams.microsoft.com/meet/48034366489950?p=ZdvjzcWe3zXHAEC3q0 | 360.3.055A |
| Virtual Session Link 3 | https://teams.microsoft.com/meet/42393591627924?p=NbeRA9NbPQaXoDY2pZ | 360.3.055B |

Keynote Speech 1



Qing-Long Han

Distinguished Professor Qing-Long Han
Member of the Academia Europaea (The Academy of Europe)
IEEE Fellow, IFAC Fellow, ACA Fellow, Honorary IEAust Fellow, CAA Fellow
Pro Vice-Chancellor (Research Quality), Swinburne University of Technology,
Australia

Distributed coordination control of multi-agent systems

9:30-10:30 | Tuesday, 12 MAY, Room 360.4.031

Abstract: Sampling and communication are both crucial for coordination in multi-agent systems (MASs), with sampling capturing raw data from the environment for control decision making, and communication ensuring the data is shared effectively for synchronized and informed control decisions across agents. However, practical MASs often operate in environments where continuous and synchronous data samplings and exchanges are impractical, necessitating strategies that can handle intermittent sampling and communication constraints. This Keynote Speech will provide a comprehensive survey of recent advances in distributed coordination control of MASs under intermittent sampling and communication, focusing on both foundational principles and state-of-the-art techniques. After introducing fundamentals, such as communication topologies, agent dynamics, control laws, and typical coordination objectives, the distinctions between sampling and communication are elaborated, exploring deterministic versus random, synchronous versus asynchronous, and instantaneous versus sequential scenarios. A detailed review of emerging trends and techniques is then presented, covering time-triggered, event-triggered, communication-protocol-based, and denial-of-service-resilient coordination control. These techniques are analyzed across various attack models, including those based on data loss, sampled data, time constraints, and topology switching. By synthesizing these developments, this survey aims to equip researchers and practitioners with a clearer understanding of current challenges and methodologies, concluding with insights into promising future directions.

Bio: Professor Han is currently Pro Vice-Chancellor (Research Quality) and a Distinguished Professor at Swinburne University of Technology, Melbourne, Australia. He held various academic and management positions at Griffith University, Central Queensland University, Australia, Southern Illinois University Edwardsville, USA, and École Nationale Supérieure d'Ingénieurs de Poitiers, France. His research interests include networked control systems, multi-agent systems, time-delay systems, smart grids, unmanned surface vehicles, and neural networks.

Professor Han was awarded the 2024 IEEE Dr.-Ing. Eugene Mittelmann Achievement Award (Highest Achievement Award in Industrial Electronics), the 2024 Chinese Association of Automation (CAA) Science and Technology Achievement Award (the CAA's Highest Achievement Award in Automation, Information and Intelligent Science), the 2021 Norbert Wiener Award (the Highest Achievement Award in Systems Science and Engineering, and Cybernetics), and the 2021 M. A. Sargent Medal (the Highest Achievement Award of the Electrical College Board of Engineers Australia). He was the recipient of the Journal of Systems Science and Complexity Best Paper Award in 2023, the IEEE Systems, Man, and Cybernetics Society Andrew P. Sage Best

Transactions Paper Award in 2019, 2020, and 2022, respectively, the IEEE/CAA Journal of Automatica Sinica Norbert Wiener Review Award in 2020, the IEEE Transactions on Industrial Informatics Outstanding Paper Award in 2020, and the IET Control Theory and Applications Premium (Best Paper) Award in 2020 and 2016, respectively.

Professor Han is a Foreign Member of the Academia Europaea (The Academy of Europe). He is a Fellow of the International Federation of Automatic Control (FIFAC), a Fellow of the Institute of Electrical and Electronics Engineers (FIEEE), a Fellow of the Asian Control Association (FACA), an Honorary Fellow of the Institution of Engineers Australia (HonFIEAust), and a Fellow of the Chinese Association of Automation (FCAA). He is a Highly Cited Researcher in both Engineering and Computer Science (Clarivate). He has served as an AdCom Member of IEEE Industrial Electronics Society (IES), a Member of IEEE IES Fellows Committee, a Member of IEEE IES Publications Committee, Chair of IEEE IES Technical Committee on Network-Based Control Systems and Applications, and the Co-Editor-in-Chief of IEEE Transactions on Industrial Informatics. He is currently the President-Elect, an Executive Board Member, and a Steering Committee Member of the Asian Control Association (ACA). He is currently the Vice-President of the Chinese Association of Automation (CAA). He is currently the Editor-in-Chief of IEEE/CAA Journal of Automatica Sinica and the Co-Editor of Australian Journal of Electrical and Electronic Engineering.

Oral Presentations

Session 1 11:00-12:00 | Tuesday, 12 May

Venue: 360.3.011

ICPS Theory and Technologies

Chairs: Ana Goulart, Marius Krüger

| Time | Paper ID, Title & Authors |
|---------------|---|
| 11:00 - 11:20 | ICPS26-000013 An Experimental Study of Machine Learning-Based Intrusion Detection for OPC UA over Industrial Private 5G Networks Song Son Ha*, Kunal Singh, Florian Foerster, Henry Beuster, Tim Kittel, Dominik Merli, Gerd Scholl |
| 11:20 - 11:40 | ICPS26-000021 Attention Mechanism-enabled Decentralized Offloading and Scheduling of DAG Tasks in Multi-Server MEC Hoa Tran-Dang*, Kim Dong-Seong |
| 11:40 - 12:00 | ICPS26-000073 Mobility-Aware Performance Evaluation of IEEE 802.11ah (Wi-Fi HaLow) for Industrial Cyber-Physical Systems Ehtisham Siddique, Muhammad Furqan, Syed Naveed Zafar Gilani, Khurram Malik, Abdulaziz Alharbi, Hannan Adeel |

Session 2 11:00-12:00 | Tuesday, 12 May

Venue: 360.3.055A

ICPS Advanced Modelling, Control, and Optimization

Chairs: Yuanye Chen, Md Redowan Mahmud

| Time | Paper ID, Title & Authors |
|---------------|--|
| 11:00 - 11:20 | ICPS26-000082 Practical Stability of Event-Based Cloud NMPC with Tube Feedback and Windowed Transfer Alvin Surjana*, Elmar Ahle, Dirk Söffker |
| 11:20 - 11:40 | ICPS26-000035 From Sensor Signals to Event Logs: Challenges of Process Mining in Cyber Physical Production Systems Valentin Just*, Gernot Steindl, Tobias Schwarzinger, Wolfgang Kastner |
| 11:40 - 12:00 | ICPS26-000074 Learning Variable Impedance Skills for Contact-rich Tasks with Passivity Guarantees Wenxin Zhu*, Jinke Yao, Qinyuan Ren |

ICPS Advanced Modelling, Control, and Optimization

Chairs: Zifan Lin, Che-Yu Lu

| Time | Paper ID, Title & Authors |
|---------------|--|
| 11:00 - 11:20 | <p>ICPS26-000045 Generalized Gramians for Model Reduction of Uncertain Discrete-Time Network Systems Azka Muji Burohman*, Edi Kurniawan, Yul Yunazwin Nazaruddin</p> |
| 11:20 - 11:40 | <p>ICPS26-000026 A Self-sensing Feedback-controlled Switched-mode Circuit for Piezoelectric Vibration Excitation Yongan Chen, Xianjun Xu, Junrui Liang*</p> |
| 11:40 – 12:00 | <p>ICPS26-000048 Age-of-Information-Aware Communication and Control Co-Design for Safe Drone Swarms Hoyong Lee*, Minseong Kim, Chang-Gun Lee</p> |

Industry Forum 1 on Industrial Digitalisation and Cybersecurity

13:30-15:00 | Tuesday, 12 MAY, Room 360.3.011

Industry Forum Chair: Dr Travis Woodward

Talk 1: The Physical AI Revolution - From Automation to Autonomy

Abstract: As the global energy landscape undergoes a dual transformation—balancing rising demand with aggressive decarbonization—the industrial sector is shifting from traditional automation to AI-driven autonomous operations. Honeywell is at the forefront of this evolution, pioneering Physical AI that bridges the gap between digital intelligence and complex physical infrastructure. This session provides a deep dive into how Physical AI is specifically revolutionizing the LNG and Refining & Petrochemical verticals.

We will explore the industry's first AI-driven control room, capable of real-time, full-scale autonomous management. Attendees will learn how Experion Operations Assistant leverages deterministic and probabilistic AI to predict process upsets 12 minutes before alarms occur, significantly reducing unplanned downtime and flaring



Benjamin Dias, Solutions Consultant, Honeywell

Benjamin Dias serves as an experienced Solutions Consultant specializing in the Refining and Petrochemicals sector at Honeywell. With a strong background spanning 25 years in operations and maintenance within the Refining and NGL industries, Benjamin has also accumulated two decades of valuable experience at Honeywell, expanding his expertise across MMM Processing, LNG, and Upstream Oil & Gas. He brings a unique perspective that blends 25 years of field-tested wisdom with a forward-looking vision for the future of energy and chemicals. Additionally, Benjamin contributes to the Academic Council for Control System Engineering at Murdoch University and plays an active role in several initiatives focused on integrating and advancing AI applications within Honeywell.

Industry Forum 1 on Industrial Digitalisation and Cybersecurity

Talk 2: Digital Transformation and Industrial Innovation in Energy Systems: Insights from Western Australia

Abstract: The energy sector is undergoing rapid transformation driven by digitalisation, automation, and data-driven decision-making. This talk will share insights from industry practice at Woodside on how advanced technologies are being deployed to enhance operational efficiency, safety, and sustainability in complex energy systems. It will also highlight emerging challenges and opportunities at the intersection of digital innovation and industrial operations.



Natalie Pollard, Head of Digital Enterprise Platforms, Woodside Energy

Natalie Pollard is Head of Digital Enterprise Platforms, Woodside Energy, with extensive experience in industrial operations, digital transformation, and technology integration within the energy sector. Her work focuses on leveraging automation, data analytics, and digital systems to improve operational efficiency, safety, and sustainability in complex industrial environments. She has a strong interest in bridging industry practice with emerging technologies and fostering collaboration between industry and research.

Oral Presentations

Session 4 15:30-17:00 | Tuesday, 12 May

Venue: 360.3.011

ICPS Energy

Chairs: Hoa Tran-Dang, Valentin Just

| Time | Paper ID, Title & Authors |
|---------------|---|
| 15:30 - 15:50 | <p>ICPS26-000019 Geodesic-Based Voltage Stability Margin Assessment for DC Traction Systems Considering Maximum Power Consumption and Injection of Electric Vehicles Xinxi Li*</p> |
| 15:50 - 16:10 | <p>ICPS26-000018 Stability Analysis of DC Traction Systems under Distributed Control Considering Converter Parameter Perturbations Xinxi Li*</p> |
| 16:10 – 16:30 | <p>ICPS26-000029 Towards Pilot Points for Observability and Cyber Resilience Ana Goulart*, Kangjing Li, Hemanshu Pota, Frank den Hartog</p> |
| 16:30 – 16:50 | <p>ICPS26-000059 (Online) Pitch Control Strategy and Experimental Validation for a Floating Wind Turbine Based on Linear Active Disturbance Rejection Control Zi Ran, Yuanye Chen*, Fang Fang</p> |

Session 5 15:30-17:00 | Tuesday, 12 May

Venue: 360.3.055A

Advanced Control, Monitoring and Industrial Applications of Power Electronic Systems

Chairs: Zifan Lin, Wenxin Zhu

| Time | Paper ID, Title & Authors |
|---------------|--|
| 15:30 - 15:50 | <p>ICPS26-000057 An Inherently Stable Neural Feedback Control Method for SOFCs in DC Microgrids Yulin Liu, Wendong Feng, Zifan Lin*, Ran Li, Ho Ching lu, Tyrone Fernando, Xinan Zhang</p> |
| 15:50 - 16:10 | <p>ICPS26-000075 Model Predictive Control of a High-Efficiency GaN-MOSFET Based Four-Phase Interleaved Bidirectional DC-DC Converter Hao Deng, Zifan Lin*, Xinan Zhang, Ho Ching lu, Tyrone Fernando</p> |
| 16:10 – 16:30 | <p>ICPS26-000078 Modelling PV Performance with Residential Variability using a Coupled Neural Framework Sean Daley, Md Redowan Mahmud*, Aneesh Krishna, Ehsan Pashajavid, Sumedha Rajakaruna</p> |
| 16:30 – 16:50 | <p>ICPS26-000086 A Variable Step-Size MPPT Control Strategy for Photovoltaic Systems to Suppress Steady-State Oscillation and Tracking Misjudgment Yang Hua, Liu Chong, Wang Lu, Li Qiang, Li Mingyi, Chen Jian, Chen Zhiwei, Niu Haihong*</p> |

ICPS Architectures & Engineering

Chairs: Alvin Surjana, Azka Muji Burohman

| Time | Paper ID, Title & Authors |
|---------------|---|
| 15:30 - 15:50 | <p>ICPS26-000025 Energy Management Design Guide for Self-powered Ambient IoT Devices: Considering Energy and Power Ratios Among Source, Storage, and Load Hanze Li, Shengqi Gao, Junrui Liang*</p> |
| 15:50 - 16:10 | <p>ICPS26-000010 Integrating Digital Twins into the System Architecture of Brownfield Filtration Plants Kathrin Land, Birgit Vogel-Heuser, Marius Krüger*</p> |
| 16:10 – 16:30 | <p>ICPS26-000056 OPC UA PubSub-based IIoT System Architecture for Mobile Machines with Minimizing Cloud Data Traffic Kathrin Land, Birgit Vogel-Heuser, Andreas Steger, Marius Krüger*</p> |
| 16:30 – 16:50 | <p>ICPS26-000079 Hybrid Terrestrial and Non-Terrestrial Communication Architecture for Industrial Cyber-Physical Systems in Remote Environments Muhammad Furqan*, Ehtisham Siddique, Azeem Imtiaz, Naveed Zafar, Idrees Ramzan, Khurram Malik</p> |

AGENDA

WEDNESDAY, 13 May

| TIME | ACTIVITY | VENUE |
|---------------------------|---|---------------------------------------|
| 09:00 - 10:00 | Keynote Speech 2 | 360.3.011 |
| 10:00 - 10:30 | Coffee Break | 360.3. Conference Events Centre |
| 10:30 - 12:00 | Paper Sessions 7, 8, 9 | |
| | <ul style="list-style-type: none"> ● Artificial Intelligence in ICPS ● Digital Transformation, Paradigms, Methods and Tools ● Special Session on Collaborative Manufacturing, Innovation Design and Control-Optimization of Industrial Cyber-Physical Systems | 360.3.011 360.3.055A 360.3.055B |
| 12:00 - 13:30 | Lunch | 360.3. Conference Events Centre |
| 13:30 - 15:00 | Industry Forum 2 on Advanced Manufacturing Facility | |
| | <ul style="list-style-type: none"> ● Industry Perspectives on the WA Advanced Manufacturing Facility | 360.3.011 |
| 15:00 - 15:30 | Coffee Break | 360.3. Conference Events Centre |
| 15:30 - 17:00 | Paper Sessions 10, 11, 12 | |
| | <ul style="list-style-type: none"> ● Artificial Intelligence in ICPS ● ICPS and Data Science ● ICPS Emerging Applications ● Special Session on Power Electronics and Energy Systems for Industrial Cyber-Physical Systems ● Special Session on Intelligent Monitoring and Control for Advanced Engineering Systems | 360.3.011 360.3.055A 360.3.055B |
| 17:30-21:00 | Conference Gala Dinner & Award Ceremony | Student Hub 430.2.001 |
| | | |
| Virtual Session Link 1 | https://teams.microsoft.com/meet/48339986111694?p=z7qkbl5B5MYDL6KXpp | 360.4.031 360.3.011 |
| Virtual Session Link 2 | https://teams.microsoft.com/meet/48034366489950?p=ZdvjzcWe3zXHAEC3q0 | 360.3.055A |
| Virtual Session Link 3 | https://teams.microsoft.com/meet/42393591627924?p=NbeRA9NbPQaXoDY2pZ | 360.3.055B |

Keynote Speech 2



Dikai Liu

Distinguished Professor,
Director, ARC Research Hub for Human-Robot Teaming for
Sustainable and Resilient Construction,
School of Mechanical and Mechatronic Engineering, University of
Technology Sydney, Australia

Weblink: <https://profiles.uts.edu.au/Dikai.Liu>

Human-Robot Collaboration: Challenges, Enabling Methodologies and Case Studies

9:00-10:00 | Wednesday, 13 MAY, Room 360.3.011

Abstract: As robotics and AI advance rapidly, robots are becoming increasingly capable of operating collaboratively with humans. This evolution will profoundly transform the relationship between humans and intelligent robots empowered by AI. This talk will explore the evolving field of human-robot collaboration. Challenges and enabling methodologies will be discussed. Through a series of case studies, we will examine how intelligent robots are being designed to work alongside humans in various applications, including civil infrastructure maintenance, construction, and manufacturing. We will also discuss the dynamics of collaboration between humans and robots, examining issues such as trust, computational modelling, physical and cognitive workload, and brain-robot interface. By reflecting on lessons learnt from these case studies, we will highlight both successes and challenges.

Bio: Dikai Liu is a distinguished professor at the Robotics Institute of the University of Technology Sydney (UTS) and an IEEE RAS Distinguished Lecturer. He is Director of the ARC Research Hub for Human-Robot Teaming for Sustainable and Resilient Construction (2025-2030). He served as Co-Director of the UTS Centre for Autonomous Systems (2013-2019). His research interest lies in robotics, with a focus on field robotics and human-robot collaboration. In addition to conducting fundamental robotics research, he has been instrumental in transforming robotics research into real industry applications. Examples include [autonomous robots](#) for bridge maintenance, [bio-inspired climbing robots](#) for inspection of confined space, [intelligent robotic co-worker](#) for human-robot collaborative abrasive blasting, [smart hoist](#) for patient transfer, and [autonomous robots](#) for underwater structure maintenance. Since 2006, his research has received over 20 Best Paper and Research/Engineering Excellence awards, including the 2024 IEEE IROS Harashima Award, the 2019 UTS Medal for Research Impact, the 2019 ASME DED Leonardo da Vinci Award, and the 2016 Australian Engineering Excellence Awards. His research has been featured by reputable newspapers and TV news channels, such as the BBC, ABC, SBS, TVBS (Taiwan), Sydney Morning Herald, 7News, AFR, and The Robot Report (USA).

Oral Presentations

Session 7 10:30-12:00 | Wednesday, 13 May

Venue: 360.3.011

Artificial Intelligence in ICPS

Chairs: Evizal Abdul Kadir, Guiyi Dong

| Time | Paper ID, Title & Authors |
|---------------|---|
| 10:30 - 10:50 | ICPS26-000071 Data-Driven Modeling Frameworks for Industrial Cyber-Physical Systems: A Systematic Review Dominik Polke*, Alvin Surjana, Elmar Ahle, Dirk Söffker |
| 10:50 - 11:10 | ICPS26-000011 On the Selection of AI Algorithms for Industrial Automation: Batch vs. Streaming Algorithms Marius Krüger*, Daniyal Kazempour, Kathrin Land, Peer Kröger, Birgit Vogel-Heuser |
| 11:10 - 11:30 | ICPS26-000016 Agentic AI Architecture for Structural Design Automation: From Regulatory Retrieval to Physics-Based Optimization Ali Abbasi, Manuel Alves, Shimasadat Hosseini, Omid Hassanshahi, Nelson Ricardo Rodrigues* |
| 11:30 - 11:50 | ICPS26-000008 (Online) Irradiance Forecasting for Photovoltaic Systems Using Temporal Convolutional Network Sameeksha Katoch, Deep Pujara*, David Ramirez, Pavan Turaga, Cihan Tepedelenlioglu, Devarajan Srinivasan, Andreas Spanias |

Session 8 10:30-12:00 | Wednesday, 13 May

Venue: 360.3.055A

Digital Transformation, Paradigms, Methods and Tools

Chairs: Sarin Kittisares, Junrui Liang

| Time | Paper ID, Title & Authors |
|---------------|---|
| 10:30 - 10:50 | ICPS26-000030 Collaborative Engineering and Operation of Industry 4.0 Digital Twins with Conflict-Free Replicated Data Types Nico Braunisch, Asset Kapi, Igor Garmaev, Marko Ristin, Tobias Kleinert, Hans Wernher van de Venn, Martin Wollschlaeger, Tom Gneuss* |
| 10:50 - 11:10 | ICPS26-000027 Tool-based agentic AI for Asset Administration Shell Generation Kay Köhle*, Darko Anicic, Thomas Runkler |
| 11:10 - 11:30 | ICPS26-000006 Asset Administration Shell Modelling Enabling Zero-Defect Manufacturing in Multi-Stage Production Systems Nelson Freitas, João Cardoso, Antonio Pegado, Miguel Arvana, Andre Rocha*, Jose Barata, Bruno Silva, Antonio Mestre |
| 11:30 - 11:50 | ICPS26-000014 Automatic Generation of JSON Schemas for Industry 4.0 Digital Twin Templates Marko Ristin, Tom Gneuss*, Uwe Schmidt, Nico Braunisch, Hans Wernher van de Venn, Martin Wollschlaeger |

Collaborative Manufacturing, Innovation Design and Control-Optimization of Industrial Cyber-Physical Systems

Chairs: Yu Liu, Mark Tappe

| Time | Paper ID, Title & Authors |
|---------------|---|
| 10:30 - 10:50 | <p>ICPS26-000004 Regional Industrial Chain Collaboration Framework Based on Heuristic-Diversity Optimization Yu Liu*, Xie Jiafan, Yuge Xu, Xiangqian Yao, Xing Li</p> |
| 10:50 - 11:10 | <p>ICPS26-000061 Large-Scale Multi-Source Heterogeneous Data Association and Integration via LLM-Driven Multimodal Entity Alignment Sendong Zhu, Yuge Xu, Xiangqian Yao, Yu Liu*, Xing Li</p> |
| 11:10 - 11:30 | <p>ICPS26-000022 Triple Extraction Framework for semantic association in data integration Yujie Zhang, Yuge Xu, Yu Liu*, Xiangqian Yao, Douxi Yan</p> |
| 11:30 - 11:50 | <p>ICPS26-000054 (Online) Adaptive Fixed-Time Containment Control for Distributed Parameter Multiagent Systems via Fuzzy Wavelet Neural Networks Zhijia Zhao, Kengfan Chen*, Xuliang Kang, Yixiang Zeng, Zhijie Liu</p> |

Industry Forum 2 on Advanced Manufacturing Facility

13:30-15:00 | Wednesday, 13 MAY, Room 360.3.011

Industry Forum Chair: Associate Professor Martin Anda

Talk 1: Industry Perspectives on the WA Advanced Manufacturing Facility

Abstract: Western Australia's Advanced Manufacturing Facility (AMF) program represents one of Australia's most ambitious applications of Design for Manufacturing and Assembly (DfMA) principles to housing delivery. This talk provides an industry perspective on the AMF—its scope, objectives, and the role of automated precast circulation plant technology in transforming how structural building components are designed and manufactured. Joshua draws on his experience leading the AMF program to explore the intersection of industrial automation and modern construction methods.



Joshua Fearnley, Project Implementation Manager, Atlas Precast

Joshua is a Chartered Professional Engineer (MIEAust CPEng) leading delivery of Atlas Precast's Factory Expansion Project inline with the Western Australian Government's Advanced Manufacturing Facility (AMF) Program—a major precast concrete manufacturing initiative designed to accelerate housing supply through industrialised construction. He brings 19 years of naval engineering and systems leadership to the challenge of implementing large-scale manufacturing automation in a construction industry context.

Session 10 15:30-17:00 | Wednesday, 13 May

Venue: 360.3.011

Artificial Intelligence in ICPS;

ICPS and Data Science

Chairs: Kay Köhle, Nelson Rodrigues

| Time | Paper ID, Title & Authors |
|---------------|--|
| 15:30 - 15:50 | ICPS26-000039 CNN-Based Forest Fire Detection from Satellite Imagery in High-Risk Peatland Regions of Riau Indonesia Sri Listia Rosa, Wan Aezwani Wan Abu Bakar, Evizal Abdul Kadir*, Muhammad Fikri Evizal, Farhan Assidiqi, Hitoshi Irie |
| 15:50 - 16:10 | ICPS26-000076 Development of an Automation Framework for Data-Driven Modeling and Adaptive Learning in Industrial Processes Dominik Polke*, Alvin Surjana, Sayed Hoseini, Lasse Wagner, Jost Göttert, Christoph Quix, Elmar Ahle |
| 16:10 - 16:30 | ICPS26-000040 (Online) Infrastructure RGB-Based Mapping for Edge Assisted Mobile Robot Navigation Ajay Kumar Sandula*, Amit Baxi, Girish S Murthy, Vincent Mageshkumar, Venkat Natarajan, Debasish Ghose, Pradipta Biswas |
| 16:30 - 16:50 | ICPS26-000031 (Online) ViT-TinyLlama: A Lightweight Vision-Language Model for Explainable Autonomous Driving Haritha Prasad Rayakota*, Pei-Chi Huang |

Session 11 15:30-17:30 | Wednesday, 13 May

Venue: 360.3.055A

Power Electronics and Energy Systems for Industrial Cyber-Physical Systems

Chairs: Guiyi Dong, Ching-Ming Lai

| Time | Paper ID, Title & Authors |
|---------------|--|
| 15:30 - 15:50 | ICPS26-000104 Class-E Direct AC–AC Converter with Input-Polarity-Independent Operation for Wireless Power Transfer Guiyi Dong*, Dongzhou Yang, Kaiwen Chen |
| 15:50 - 16:10 | ICPS26-000105 Three-Switch Three-Phase Class-E Direct AC–AC Converter for Induction Heating Guiyi Dong*, Dongzhou Yang, Kaiwen Chen |
| 16:10 - 16:30 | ICPS26-000101 A Dual-Parameter-Tuned WPT System with Decoupled PFM Control for EV Charging Yong Ying, Ching-Ming Lai*, Guiyi Dong, Chi Kong Tse |
| 16:30 - 16:50 | ICPS26-000103 A Novel WPT System with Battery Voltage Class Interoperability for EV Chao Liu, Ching-Ming Lai*, Yiming Zhang |
| 16:50 - 17:10 | ICPS26-000098 (online) A Distributed Photovoltaic Wireless Power Self-Supply System for Marine Bionic Robots Jianghua Liu, Kaiwen Chen*, J. F. Pan, Dongzhou Yang, Chuanmeng Liu |

17:10 - 17:30 **ICPS26-000097** (online)
A MEPCD-Based Efficiency Tracking Method for Multi-Tx Wireless Power Transfer Systems with Active Rectification
 Yuanbiao Song, Kaiwen Chen*, J. F. Pan

Session 12 15:30-17:00 | Wednesday, 13 May

Venue: Room 360.3.055B

**ICPS Emerging Applications;
 Intelligent Monitoring and Control for Advanced Engineering Systems
 Chairs: Andre Rocha, Yang Hu**

| Time | Paper ID, Title & Authors |
|----------------------|---|
| 15:30 - 15:50 | ICPS26-000064 (Online) A Mission-Based Conceptual Orchestration Architecture for Heterogeneous Robot Fleets in Smart Farming Max Langer*, Marcel Markgraf, Holger Fichtl, Julia Engelbrecht |
| 15:50 - 16:10 | ICPS26-000037 Adaptive Robotic Environmental Sensing via Deep Kernel Learning Sarin Kittisares*, Ryosuke Matsuo, Shinya Yasuda, Hiroshi Yoshida |
| 16:10 - 16:30 | ICPS26-000049 Deep Reinforcement Learning-Based Control of Multicopters under Actuator Failure Mark Tappe*, Niklas Widulle, Stephan Myschik, Oliver Niggemann |
| 16:30 - 16:50 | ICPS26-000102 Design of a Smart Forest Fire Monitoring and Warning System Using Terahertz Sensing and IoT Communication Evizal Abdul Kadir*, Wan Aezwani Wan Abu Bakar, Sri Listia Rosa, Muhammad Fikri Evizal, Farhan Assidiqi, Hitoshi Irie |

AGENDA

THURSDAY, 14 May

| TIME | ACTIVITY | VENUE |
|------------------------|---|---------------------------------------|
| 09:00 - 10:00 | Keynote Speech 3 | 360.3.011 |
| 10:00 - 10:30 | Coffee Break | 360.3. Conference Events Centre |
| 10:30 - 12:00 | <p>Industry Forum 3 on Network Stability, AI, and Cybersecurity</p> <ul style="list-style-type: none"> ● Analysis of Network Stability and the Internet Avalanche Threat ● Bridging the Gap: The Management of IT/OT Cybersecurity and Regulatory Hurdles in Industrial Tech Integration | 360.3.011 |
| 12:00 - 13:30 | Lunch | 360.3. Conference Events Centre |
| 13:30 - 15:10 | <p>Paper Sessions 13, 14, 15</p> <ul style="list-style-type: none"> ● ICPS Advanced Modelling, Control, and Optimization ● ICPS Automation & Autonomy ● ICPS Energy ● Special Session on Resilient Monitoring and Control of Networked Cyber-Physical Systems ● Special Session on Artificial Intelligence in Industrial Cyber-Physical Systems: Methods, Challenges, and Applications in Network Control, Digital Twins, and Data-Driven Optimization | 360.3.011 360.3.055A 360.3.055B |
| 15:10 - 15:30 | Coffee Break | 360.3. Conference Events Centre |
| 15:30 - 16:00 | Closing Ceremony | 360.3.011 |
| | | |
| Virtual Session Link 1 | https://teams.microsoft.com/meet/48339986111694?p=z7qkbl5B5MYDL6KXpp | 360.4.031 360.3.011 |
| Virtual Session Link 2 | https://teams.microsoft.com/meet/48034366489950?p=ZdvjzcWe3zXHAEC3q0 | 360.3.055A |
| Virtual Session Link 3 | https://teams.microsoft.com/meet/42393591627924?p=NbeRA9NbPQaXoDY2p | 360.3.055B |

Keynote Speech 3



Yang Shi

Professor, Fellow of IEEE, ASME, EIC, CSME
University of Victoria, Canada

Integrated Model Predictive Control (MPC) Framework for Autonomous Intelligent Mechatronic Systems

9:00-10:00 | Thursday, 14 MAY, Room 360.3.011

Abstract: Networked and distributed control for mechatronic systems have received great attention in the control community due to its wide application areas. Network-induced limitations may be caused by the presence of a communication channel, or because of the efficient assignment of power and other limited resources. Intelligent mechatronic systems represent a large class of smart systems that encompass computational (i.e., hardware and software) and physical components, seamlessly integrated and closely interacting to autonomously sense and manipulate the changing state of the physical system. These systems involve a high degree of complexity at numerous spatial and temporal scales and highly networked communications integrating computational and physical components. Model predictive control (MPC) is a promising paradigm for high-performance and cost-effective control of networked and distributed mechatronic systems. This talk will firstly summarize the major application requirements and challenges to innovate in designing, implementing, deploying and operating intelligent mechatronic systems. Further, the robust MPC and distributed MPC design methods will be presented. Finally, the application of MPC algorithms to a variety of autonomous intelligent mechatronic systems will be illustrated.

Bio: Yang Shi received his B.Sc. and Ph.D. degrees from Northwestern Polytechnical University, Xi'an, China, in 1994 and 1998, respectively, and the Ph.D. degree in electrical and computer engineering from the University of Alberta, Edmonton, AB, Canada, in 2005. He was a Postdoctoral Fellow in the Department of Automation, Tsinghua University, China, during 1998-2000. From 2005 to 2009, he was an Assistant Professor and Associate Professor in the Department of Mechanical Engineering, University of Saskatchewan, Saskatoon, SK, Canada. In 2009, he joined the University of Victoria, and now he is a Professor in the Department of Mechanical Engineering, University of Victoria, Victoria, BC, Canada. His research interests include networked and distributed systems, model predictive control (MPC), cyber-physical systems (CPS), robotics and mechatronics, navigation and control of autonomous systems (AUV and UAV), and energy system applications.

On teaching and mentorship, Dr. Shi received the University of Saskatchewan Student Union Teaching Excellence Award in 2007, the Faculty of Engineering Teaching Excellence Award in 2012 at the University of Victoria (UVic), and the 2023 REACH Award for Excellence in Graduate Student Supervision and Mentorship.

On research, he is the recipient of the JSPS Invitation Fellowship (short-term) in 2013, the UVic Craigdarroch Silver Medal for Excellence in Research in 2015, the Humboldt Research Fellowship for Experienced Researchers in 2018, the CSME Mechatronics Medal (2023), the IEEE Dr.-Ing. Eugene Mittelmann Achievement Award (2023), the 2024 IEEE Canada Outstanding Engineer Award, and the 2025 David H. Turpin Gold Medal for Career Achievement in Research (UVic).

He served as a Vice-President on Conference Activities of IEEE IES (2022-2025) and the Chair of IEEE IES Technical Committee on Industrial Cyber-Physical Systems. Currently, he is IFAC Council Member and Editor-in-Chief of IEEE Transactions on Industrial Electronics. He also serves as Associate Editor for Automatica, IEEE Transactions on Automatic Control, Annual Review in Controls, etc.

He is a Fellow of IEEE, ASME, CSME, Engineering Institute of Canada (EIC), Canadian Academy of Engineering (CAE), Royal Society of Canada (RSC), and a registered Professional Engineer in British Columbia, Canada.

Industry Forum 3 on Network Stability, AI, and Cybersecurity

Industry Forum Chair: Dr Moayed Moghbel

Talk 1: Analysis of Network Stability and the Internet Avalanche Threat

10:30-11:30 | Thursday, 14 MAY, Room 360.3.011

Abstract: The Internet Avalanche Threat occurs frequently in all networks.

Recently the Internet Network has been proven to be unstable, however there are conditions where the internet will operate in a stable manner. Malicious actors can modify the network stability to block all traffic either locally or remotely. When stable conditions are restored, the network will recover without human intervention and there is little or no trace of the actions that caused the network instability.

This presentation will describe the internet network stability criteria created by Prof Erol Gelenbe and how the internet stability can be degraded to block all traffic. The description of the Internet Avalanche Threat will describe how network failures can be created remotely and by poor network design.

Methods for Identifying Internet Avalanche activity and guidelines of changes to network designs to mitigate Internet Avalanche events will be discussed.

Additional Talk:

How AI Makes Decisions and How This Information Applies to the Anthropic Mythos Threat



Dr Walter Green PhD, MScEng, ChCSP, CEng, CPEng, CITP, SMIEEE, FIET, FIEAust, FBCS, FAIM, FZweIE

Dr Green graduated with degrees in Electronics and Computer Science and his PhD was in Computer Engineering. He has been involved with several Cyber events and AI projects where ordinary control systems had failed.

He has more than 40 years' experience in computer and telecom projects and his company has been providing leading edge computer and telecom solutions for more than 25 years.

He has more than 35 years' experience in creating and identifying Cyber Threats His PhD research and patents are used in industrial control systems and energy saving devices throughout the world. His Telecom experience and his PhD research provided the mathematical competencies to identify and analyse the Internet Avalanche.

Walter has been a member of the IEEE for more than 50 years.

Industry Forum 3 on Network Stability, AI, and Cybersecurity

Talk 2: Bridging the Gap: The Management of IT/OT Cybersecurity and Regulatory Hurdles in Industrial Tech Integration

11:30-12:00 | Thursday, 14 MAY, Room 360.3.011

Abstract: The successful adoption of advanced diagnostics and Machine Learning (ML) in industrial environments is rarely limited by the technology itself, but by the complexity of the integration process. This presentation provides a pragmatic, "on-the-ground" perspective on delivering technology solutions within the rigorous IT/OT frameworks of Tier-1 Australian operators such as Woodside, Fortescue, and Alinta.

Focusing on the role of the solution manager, we will examine the interpretation of cybersecurity mandates and the "abuse cases" of regulatory processes that can delay or derail deployment. The discussion will cover the critical path from initial client requirements to full system integration, highlighting how to navigate data governance, security audits, and the legal nuances of technology adoption. Attendees will gain a management-level understanding of how to lead teams through these friction points, ensuring that high-value digital transformations are not just designed, but successfully adopted and operationalized.



Michael Meehan General Manager (Australia), Monitra

Michael is a qualified Electrical Engineer (BEng Hons) and the General Manager for Monitra's Australian operations. He specializes in the practical delivery and management of High Voltage (HV) asset health and monitoring solutions. With a career spanning over 20 years, Michael has built a reputation for successfully navigating the complex intersection of industrial engineering and corporate IT infrastructure.

He has led large-scale technology deployments for major entities, including Woodside, Fortescue, and Alinta, focusing on the hands-on integration of diagnostic tools and ML-driven systems. Michael's expertise lies in bridging the gap between technical engineering teams and client-side IT/Cybersecurity stakeholders to ensure that advanced solutions are adopted efficiently and provide immediate long-term value.

Oral Presentations

Session 13 13:30-15:10 | Thursday, 14 May

Venue: 360.3.011

ICPS Advanced Modeling, Control, and Optimization;

ICPS Automation & Autonomy

Chairs: Yu Liu, Weidi Cheng

| Time | Paper ID, Title & Authors |
|---------------|--|
| 13:30 - 13:50 | ICPS26-000028 Digital Twin-based Robust Viewpoint Sampling for Automated Robotic Inspection Yecheon Seo*, Jaeyoung Lee, Hyeonwoo Yu, Jong Pil Yun, Min Su Kim, Jinseok Jang, Hong-In Won |
| 13:50 - 14:10 | ICPS26-000083 Digital Twin-Enabled Incentive Learning for Dynamic Sensing Agents in Smart Transportation Cyber-Physical Systems Weiwei Hu*, Yuichi Ohsita, Hideyuki Shimonishi |
| 14:10 - 14:30 | ICPS26-000042 Least Squares Estimation of Current Control Parameters for E-bikes with Simulation and Experimental Validation Che-Yu Lu*, Wei-Jie Liao |
| 14:30 - 14:50 | ICPS26-000002 (Online) A Self-Adaptive Digital Twin Architecture to Automate Greenhouse Management Riccardo Sieve*, Prasad Talasila, Peter Gorm Larsen, Einar Broch Johnsen |
| 14:50 - 15:10 | ICPS26-000050 (Online) Metrics for Assessing the Verifiability of PLC-based Code for Production Automation Ziming Wen*, Andreas Bremer, Yizhi Wang, Alexander Weigl, Bernhard Beckert, Birgit Vogel-Heuser |

Session 14 13:30-15:00 | Thursday, 14 May

Venue: 360.3.055A

ICPS Energy

Chairs: Zifan Lin, Nashit Ali

| Time | Paper ID, Title & Authors |
|---------------|---|
| 13:30 - 13:50 | ICPS26-000044 Virtual Sensorless Current Control of Asymmetric T-Type Converters Using Unipolar PWM Che-Yu Lu*, Jia-En Zeng, Chun-Te Yin |
| 13:50 - 14:10 | ICPS26-000070 Multi-Target Forecasting for Wind Turbines via Intra-farm Spatial Transfer Learning Zhenghou Yang, Lu Yu, Yang Hu*, Jian Han, Feng Zhou |
| 14:10 - 14:30 | ICPS26-000017 Physical-Data Driven Multi-Scale Cascaded Dynamic Modeling and Validation for Wind Turbines Kaishen Yuan, ZhengHou Yang, Yang Hu* |
| 14:30 - 14:50 | ICPS26-000020 (Online) BiGRU with Bayesian Optimization for Line Loss Rate Forecasting in Power Grids Yifei Chen*, Kye Yak See |

Session 15 13:30-15:10 | Thursday, 14 May Venue: 360.3.055B

Artificial Intelligence in Industrial Cyber-Physical Systems: Methods, Challenges, and Applications in Network Control, Digital Twins, and Data-Driven Optimization

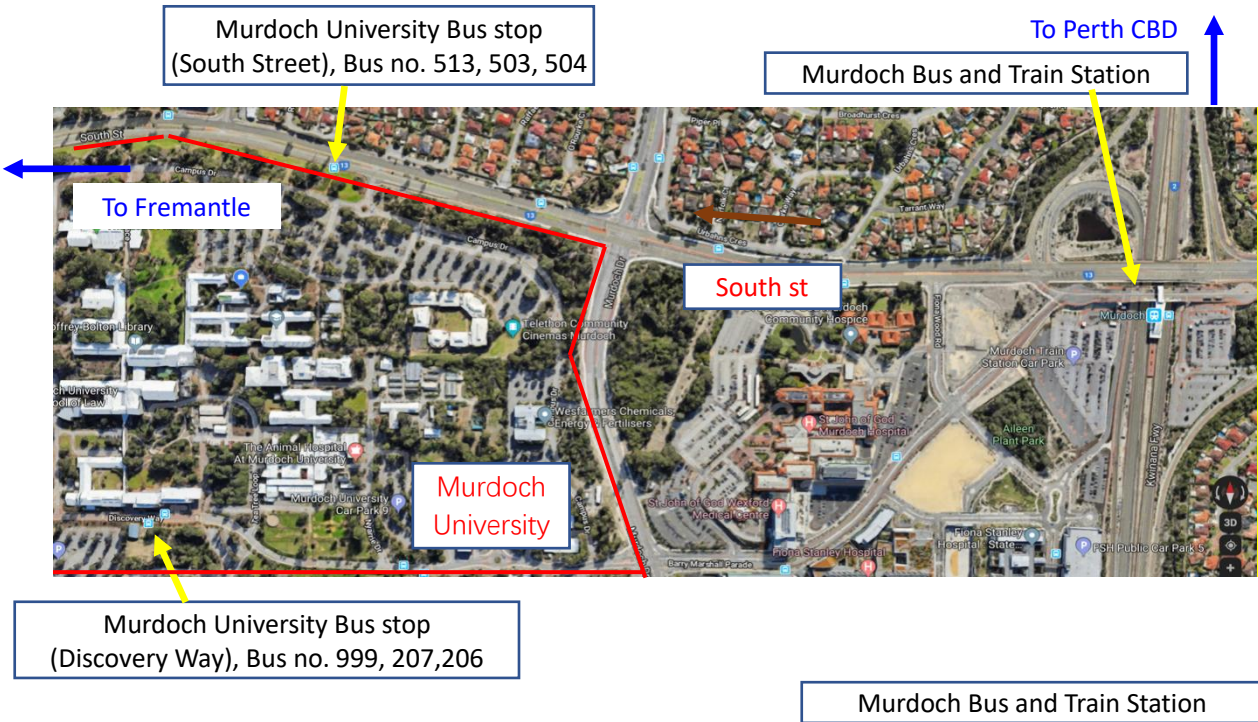
Resilient Monitoring and Control of Networked Cyber-Physical Systems

Chairs: Tianhao Qie, Zhuopeng Yang

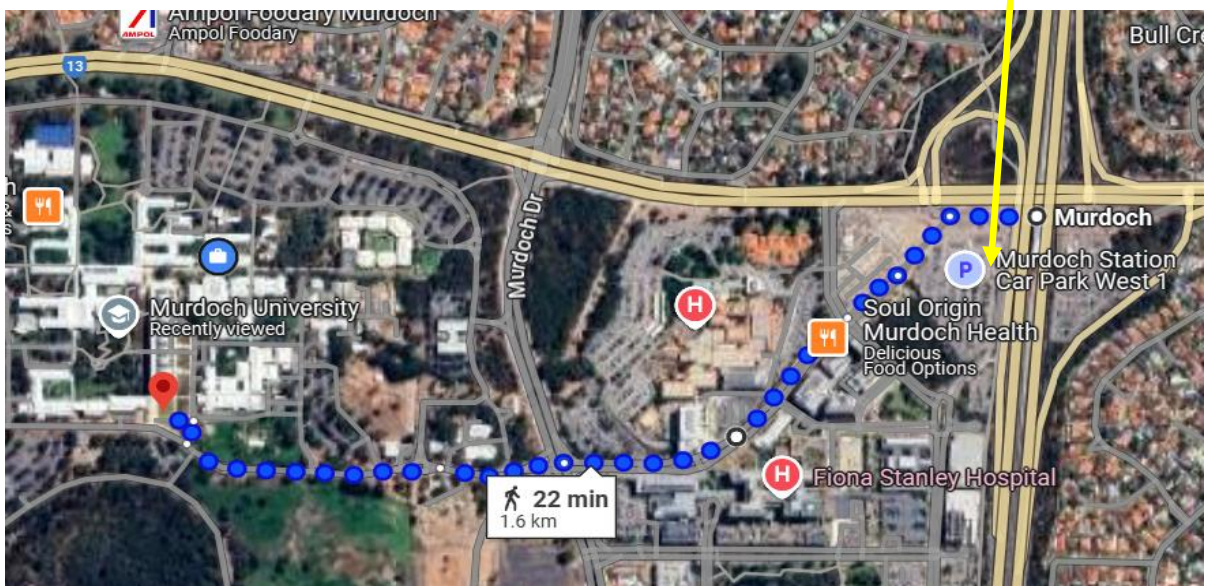
| Time | Paper ID, Title & Authors |
|---------------|---|
| 13:30 - 13:50 | ICPS26-000024 An Accurate Health-Monitoring Method for IGBT Power Module in the Traction System Tianhao Qie*, Huiqing Chen, Yuji Zeng, Xin Wang, Chaoqun Xiang, Herbert Ho-Ching Iu, Chi K. Tse |
| 13:50 - 14:10 | ICPS26-000046 The Agentic Control Framework: Integrating Knowledge Graph Retrieval and Game-Theoretic Multi-Agent Learning for Robust Process Design Nelson Ricardo Rodrigues*, Ali Abbasi, Shimasadat Hosseini, Nuno Costa, Duarte Fernandes |
| 14:10 - 14:30 | ICPS26-000058 Adaptive Estimator-Based Variable Exponent Fixed-Time Control for Multiagent Systems Under Switching Topologies Jinshuai Si*, Haibin Huang, Yufei Zhuang, Xiaoyi Ma, Xinxin Zhou, Mingyang Cui |
| 14:30 - 14:50 | ICPS26-000069 A Protection Scheme to Suppress High Impedance Faults on Large Distribution Networks Jack Wheatcroft*, Yanqing Liu, Ehsan Pashajavid, Arindam Ghosh, Yanyan Yin |
| 14:50 - 15:10 | ICPS26-000001 (Online) Resilience Modeling and Resource Configuration Optimization of Production Lines Considering Equipment Failures Ding Zhang*, Rui Pan, Zexiong Lin, Yuge Xu, Douxi Yan |

Conference Site (Boola Katitjin, Building 360)

Take Train or Bus

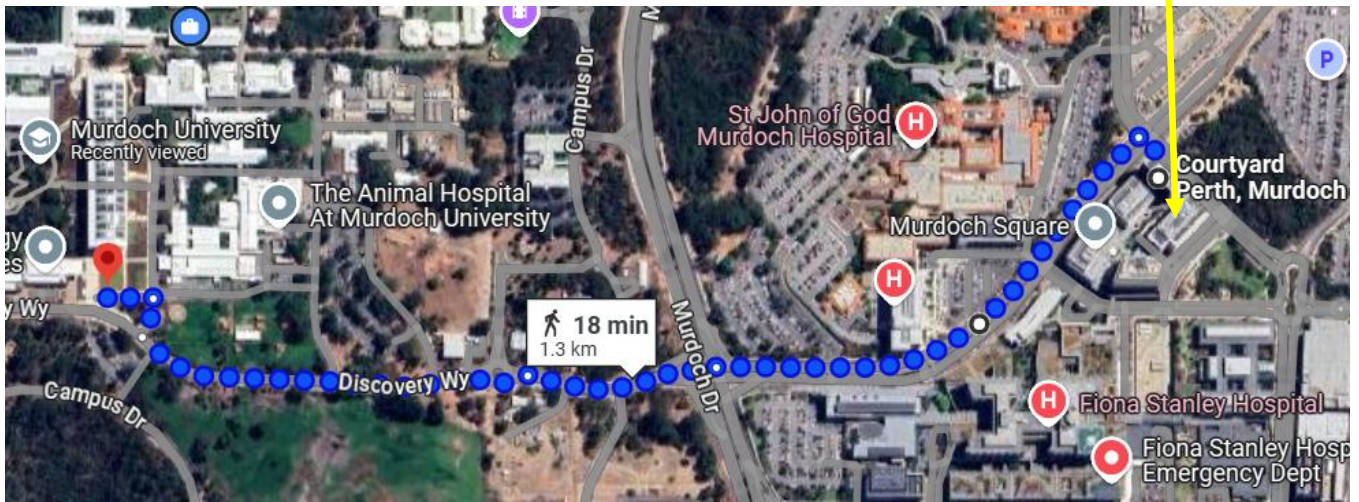


Walk From/to Murdoch Train or Bus Station to Boola Katitjin



Walk From/to Courtyard Hotel (Murdoch) to Boola Katitjin

Courtyard Hotel

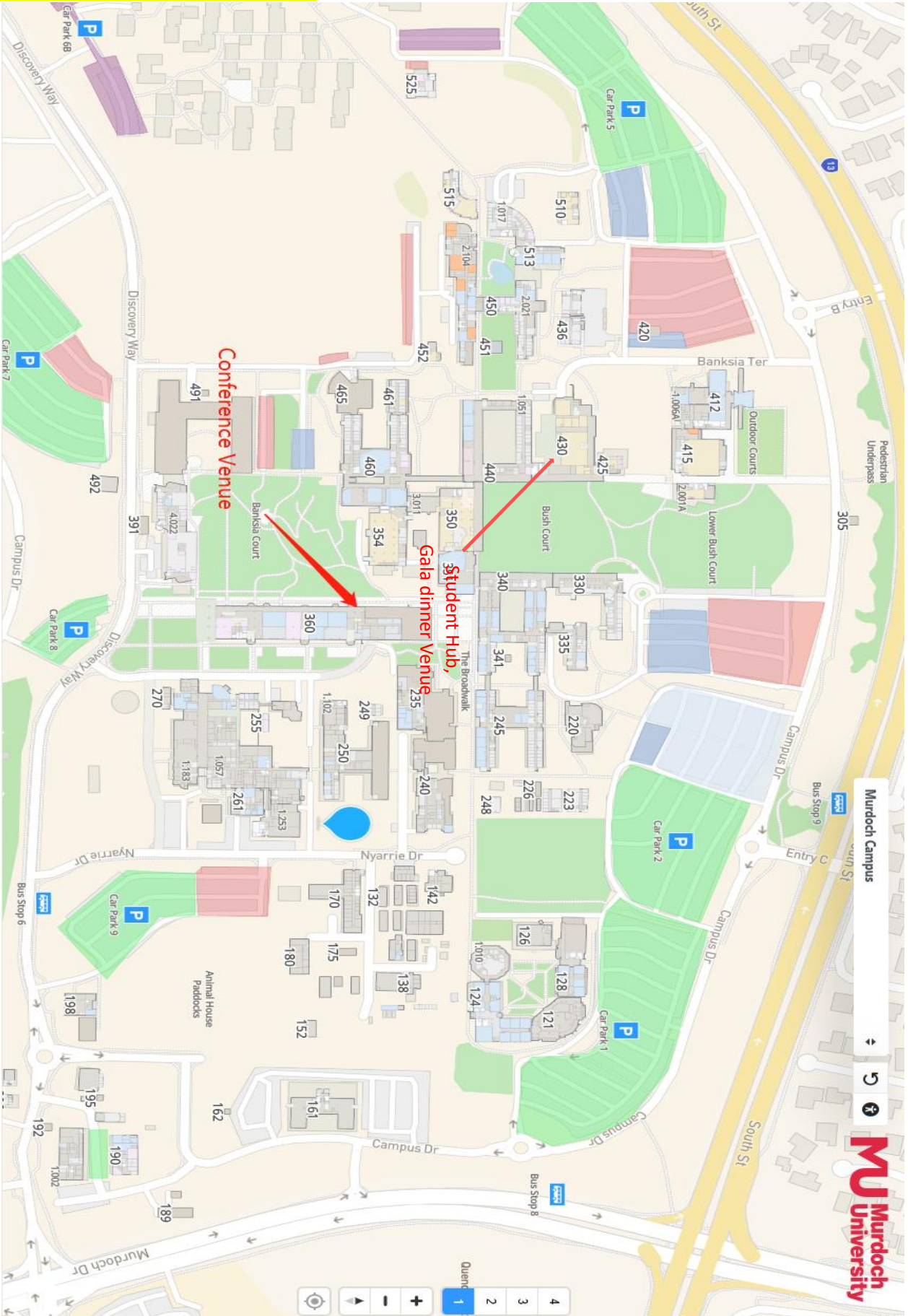


Zoomed Area



*Conference venue: Registration desk, welcome reception, lunch, coffee break, oral presentation, etc.

Murdoch University Campus Map



Organised by



IEEE
**Industrial
Electronics
Society™**



IEEE

*Advancing Technology
for Humanity*

MU **Murdoch
University**

Further Sponsored by

**BUSINESS
EVENTS
PERTH**

9th IEEE International Conference on Industrial Cyber-Physical Systems

ICPS 2026

11 - 14 May 2026

Perth, Australia



ICPS 2026

