

IEEM2025

IEEE International Conference on Industrial
Engineering and Engineering Management (IEEM)



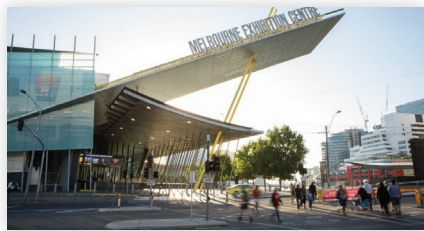
IEEE

7 to 10 December, 2025
Melbourne Convention and Exhibition Centre, Australia



www.ieem.org

WAYFINDER



Melbourne Convention and Exhibition Centre, Australia

Level 1

1 Convention Centre Pl, South Wharf
VIC 3006, Australia

Travel By Public Transportation

From Southern Cross Station (Train):

1. Arrive at Southern Cross Station .
2. Walk 10 minutes: to reach the MCEC.

From Flinders Street Station (Train):

1. Take a train to Flinders Street Station .
2. Walk along the river: or down Clarendon Street for about 5 minutes to reach the MCEC.

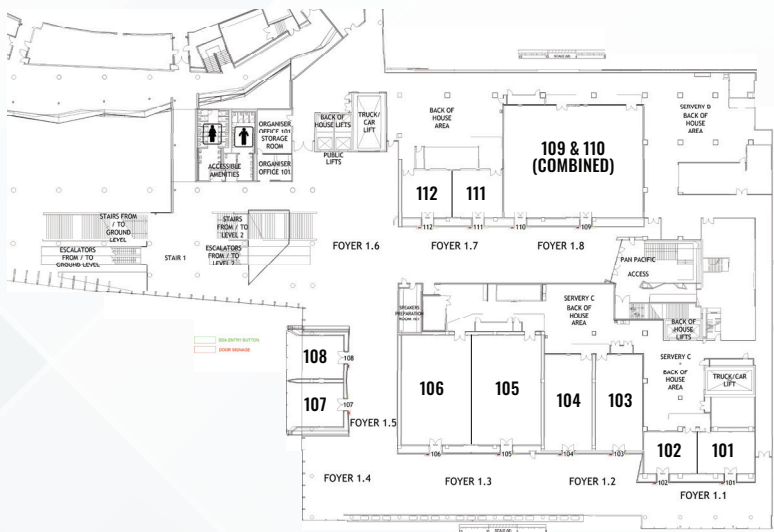
From Tram Routes 96, 109, or 12:

1. Board tram routes 96, 109, or 12 .
2. Disembark at stop 124A:
Casino/MCEC/Clarendon Street.
This stop is located outside the venue's
Clarendon Street entrance.

From Tram Routes 70, 75, or the City Circle Tram:

1. Board tram routes 70, 75, or the City Circle Tram .
2. Disembark at Stop 1 (Spencer Street/Flinders Street) .
3. Walk down Clarendon Street: for about 5 minutes to reach the MCEC.

Floor Plan



p. 3	Chairs' Welcome Message
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CHAIRS' WELCOME MESSAGE

A Warm Welcome to Melbourne!

On behalf of the entire organizing and program committees, it is our great honor to welcome all speakers and guests attending the IEEE International Conference on Industrial Engineering and Engineering Management (IEEM) 2025 in the vibrant city of Melbourne.

Melbourne, renowned for its cultural diversity, innovation, and dynamic energy is the perfect backdrop for this gathering of minds. Since its inception, IEEM has served as a leading platform for exchanging knowledge, fostering collaboration, and advancing research in the fields of industrial engineering and engineering management.

The program we have curated for you is rich with insightful keynote presentations and thought-provoking technical sessions. We are particularly grateful to Swinburne University of Technology for generously hosting the technical visit to their state-of-the-art Digital Manufacturing Hub, offering a unique opportunity to see cutting-edge research in action.

We extend our deepest gratitude to our distinguished presenters, sessions chairs, and reviewers, whose dedication and expertise are the foundation of this high-quality program. Beyond the technical program, we hope you will take the opportunity to network with colleagues, both old and new, and to experience the unique charm and attractions that Melbourne has to offer.

Organizing an event such as this is a collective effort, and we are profoundly thankful to our sponsors, partners, and the dedicated organizing team for their unwavering support.

We wish you an inspiring, productive, and memorable conference experience at IEEM2025.

Warmly,

Huadong MO

Organizing Chair, IEEM2025
University of New South Wales

Seung Ki MOON

Organizing Chair, IEEM2025
Nanyang Technological University

Kah Hin CHAI

Program Chair, IEEM2025
National University of Singapore

Roger JIAO

Program Chair, IEEM2025
Georgia Institute of Technology

Min XIE

Program Chair, IEEM2025
City University of Hong Kong

Organizing Chairs



Huadong MO
University of New South Wales



Seung Ki MOON
Nanyang Technological University

Program Chairs



Kah Hin CHAI
National University of Singapore



Roger JIAO
Georgia Institute of Technology



Min XIE
City University of Hong Kong

COMMITTEES

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University of New South Wales

Seung Ki MOON

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National University of Singapore

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Federation University

Mu-Chen CHEN

National Yang Ming Chiao Tung University

Ying-Mei CHENG

China University of Technology

Zhi Lin CHONG

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Ahmed EL-BOURI

Sultan Qaboos University

Jakub GAJEWSKI

Lublin University of Technology

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Siana HALIM

Petra Christian University

Janne HARKONEN

University of Oulu

Markus HARTONO

University of Surabaya

Adnan HASSAN

Islamic University of Madinah

Takashi HASUIKE

Waseda University

William HO

The University of Melbourne

Qingpei HU

Chinese Academy of Sciences

Li-Ting HUANG

Chang Gung University

Supachart IAMRATANAKUL

King Mongkut's University of Technology
Thonburi

Tatsuya INABA

Kanagawa Institute of Technology

Shino IWAMI

NEC Corporation

Raja JAYARAMAN

New Mexico State University

Shih-Wen KE

National Central University

Gitae KIM

Hanbat National University

Rae Yule KIM

Montclair State University

Yong-Hong KUO

The University of Hong Kong

Gwo-Liang LIAO

National Taitung University

S.C. Johnson LIM

Universiti Teknologi MARA

Shieu-Hong LIN

Biola University

Tyrone T. LIN

National Dong Hwa University

Weidong LIN

Singapore Institute of Technology

Bin LIU

University of Strathclyde

Hongrui LIU

San Jose State University

Mei-Chen LO

National United University & National Yang
Ming Chiao Tung University

Tzu Yang LOH

National University of Singapore

Shuang MA

University of Science and Technology Beijing

Maher MAALOUF
Khalifa University

Tahir MAHMOOD
University of the West of Scotland

Nur Aini MASRUOH
Universitas Gadjah Mada

Harekrishna MISRA
Institute of Rural Management Anand

Amirhossein MOSTOFI
Auckland University of Technology

Amitava MUKHERJEE
XLRI - Xavier School of Management

Indrajit MUKHERJEE
IIT Bombay

Ziaul Haque MUNIM
University of South-Eastern Norway

Nabil NAHAS
Université de Moncton

Dinh Son NGUYEN
The University of Danang, University of Science and Technology

Mojahid Saeed OSMAN
North Dakota State University

Alan PILKINGTON
University of Westminster

Abroon QAZI
American University of Sharjah

Boitumelo RAMATSETSE
Stellenbosch University

Fernando ROMERO
University of Minho

Augustina Asih RUMANTI
Telkom University

Panrawee RUNGSKUNROCH
Rajamangala University of Technology Thanyaburi

Premaratne SAMARANAYAKE
Western Sydney University

R.R.K. SHARMA
Indian Institute of Technology Kanpur

Ronnachai SIROVETNUKUL
Mahidol University

Bertha Maya SOPHA
Universitas Gadjah Mada

Sergio SOUSA
University of Minho

Rawinkhan SRINON
Mahidol University

Aries SUSANTY
Diponegoro University

Quang Minh TA
University of West Florida

Yoshinobu TAMURA
Yamaguchi University

Anders THORSTENSON
Aarhus University

Guilherme TORTORELLA
University of Melbourne

Norbert TRAUTMANN
University of Bern

Mariza TSAKALEROU
Nazarbayev University

Yuan-Jye TSENG
Yuan Ze University

David VALIS
University of Defence

Junfeng WANG
Huazhong University of Science and Technology

Rui WANG
Harbin Institute of Technology

Yue WANG
The Education University of Hong Kong

Christina WIRAWAN
Universitas Kristen Maranatha

Haiyan XU
Institute of High Performance Computing, Agency for Science, Technology & Research

Om Prakash YADAV
North Carolina Agricultural and Technical State University

Keng-Chieh YANG
National Kaohsiung University of Science and Technology

Anies Faziehan ZAKARIA
Universiti Kebangsaan Malaysia

Aibo ZHANG
University of Science and Technology Beijing

Linda ZHANG
IESEG School of Management

Meimei ZHENG
Shanghai Jiao Tong University

Yaoming ZHOU
Shanghai Jiao Tong University

PROGRAM

Activity Title & Location

All morning & afternoon breaks, as well as lunch, will be served in the Registration and Badge Pick up Foyer		
Sun - 07 Dec	Activity Title	Location
15:00 - 17:30	Reg & Name Badge Pick Up	Level 1: Foyer 1.7 - 1.8
18:30 - 20:30	Invite Only Committee Dinner	Venue to be decided
Mon - 08 Dec	Activity Title	Location
08:00 - 18:00	Reg & Name Badge Pick Up	Level 1: Foyer 1.7 - 1.8
09:00 - 10:45	Keynote 1: "Transitioning from Industry 4.0 to Industry 5.0: A Human-Centric Approach" Keynote 2: "Public funding to cross the Valley of Death: Space as a laboratory"	Room 109 & 110
10:45 - 11:15	AM Coffee/Tea Break	
11:15 - 13:00	AM2 Oral Sessions	Rooms: 103 to 108, 111 to 112
13:00 - 14:00	Lunch Buffet	
14:00 - 15:30	PM1 Oral Sessions	Rooms: 103 to 108, 111 to 112
15:30 - 16:00	PM Coffee/Tea Break	
16:00 - 18:00	PM2 Oral Sessions	Rooms: 103 to 108, 111 to 112

Tue - 09 Dec	Activity Title	Location
08:00 - 14:00	Reg & Name Badge Pick Up	Level 1: Foyer 1.7 - 1.8
08:30 - 10:30	AM1 Oral Sessions	Rooms: 103 to 108, 111 to 112
10:30 - 11:00	AM Coffee/Tea Break	
11:00 - 12:30	AM2 Oral Sessions	Rooms: 103 to 108, 111 to 112
12:30 - 13:30	Lunch Buffet	
13:30 - 15:30	PM1 Oral Sessions	Rooms: 103 to 108, 111 to 112
15:30 - 17:30	Poster Session & PM Coffee/Tea Break	Level 1: Foyer 1 - 2
18:00 - 21:00	Ticket Holders Only Conference Dinner Best Paper Awards, Closing Next IEEM Meeting Announced	Room 109 & 110
Wed - 10 Dec	Activity Title	
09:00 - 12:00	Technical Visit to Swinburne University of Technology Digital Manufacturing Hub	

KEYNOTE 1



Saeid NAHAVANDI

Inaugural Associate Deputy Vice-Chancellor Research and Chief of Defence Innovation, Swinburne University of Technology

"Transitioning from Industry 4.0 to Industry 5.0: A Human-Centric Approach"

Mon-08 Dec 2025 | 09:00 – 10:45
Room 109 & 110

About the Speaker

Distinguished Professor Saeid Nahavandi is Swinburne University of Technology's inaugural Associate Deputy Vice-Chancellor Research and Chief of Defence Innovation. Professor Nahavandi is an internationally recognised expert in intelligent robotic and haptic systems, motion platforms and simulators, autonomous vehicles, as well as modelling and simulation technologies with a specific focus on innovation and training pertaining to defence and security domains. He has published over 1300 scientific papers in various international journals and conferences, as well as commercialised his translational research and technology innovation through start-up companies.

Professor Nahavandi is IEEE SMCS, Co-Editor-in-Chief, IEEE Systems Journal, Senior Editor: IEEE Access, Associate Editor of IEEE Transactions on Cybernetics and IEEE Press Editorial Board member. He is also an elected Fellow of the IEEE (FIEEE), Fellow of Engineers Australia (FIEAust), Fellow of the IET (FIET), and Fellow of the Australian Academy of Technology and Engineering (FTSE).

"Transitioning from Industry 4.0 to Industry 5.0: A Human-Centric Approach"

The advent of digital technologies for advanced manufacturing has resulted in a rapid transformation in the industrial world. In the manufacturing sector, Industry 4.0 largely aims to transform production agents from fully physical systems to cyber-physical systems. This is achieved by integration of various technologies such as Internet-of-Things, Artificial Intelligence (AI), big data, edge computing, cyber-security etc. to bridge the digital and physical worlds. In this respect, a strong necessity to increase productivity through automated means while avoiding redundancy of human workers has led to great challenges on the global economy.

In this presentation, the concept of Industry 5.0 that capitalises on a human-centric approach is elucidated, offering a solution to counter the issues of sidelining human capitals in Industry 4.0 environments. The notion is to leverage the possibility of intertwining robots and autonomous systems with the human brain through intelligent human-machine interfaces, allowing both parties (humans and machines) to work as collaborators instead of competitors. As such, while the main concern in Industry 4.0 is focused on automation, Industry 5.0 will be a synergy between humans and autonomous machines to drive the next generation of production strategies.

The presentation will deliberate approaches to bring back human capital to the factory floors in the era of Industry 5.0. Emerging technologies such as wearables and AI to pair humans and machines and exploit human brainpower and creativity to increase production efficiency will be described. On the one hand, the robotic workforce will be perceptive and can intelligently learn human intention and desire. On the other hand, the human workforce will carry out tasks alongside robots, not only with no fear but also with peace of mind, knowing that their robotic co-workers adequately understand them and have the ability to effectively collaborate with them.

The presentation will also explain the roles and responsibilities of the next generation of collaborative robots, denoted as cobots, in Industry 5.0 environments. Cobots will not be only a programmable machine that can perform repetitive tasks but also will transform into an ideal human companion to realise high value-added production tasks, flourishing trusted autonomy, reduced waste and increased human safety. The impact of Industry 5.0 on the manufacturing industry and overall economy from the productivity point of view will be discussed, leading to the co-existence of humans and cobots within a circular economic ecosystem.

KEYNOTE 2



Andrea P BELZ

*President, IEEE Technology and Engineering Management Society TEMS
Vice-Dean of Transformative Initiatives, Research Director, Information Science Institute,
Director, Center for Research in Space Technologies (CREST) and Professor of Practice in Industrial and Systems Engineering,
USC Viterbi School of Engineering, University of South California (USC)*

"Public funding to cross the Valley of Death: Space as a laboratory"

Mon-08 Dec 2025 | 09:00 - 10:45
Room 109 & 110

About the Speaker

Andrea Belz is the inaugural Vice Dean of Transformative Initiatives at the University of Southern California Viterbi School of Engineering (USC Viterbi), where she is a Research Director in Computational Systems and Technologies at the Information Science Institute and a Professor of Practice in Industrial and Systems Engineering. She specializes in engineering policy and technology strategy and serves as Director of Translational Strategy of the California Defense Ready Electronics and Microdevices Superhub (California DREAMS), and Director of the Center for Research in Space Technologies (CREST). She also serves as a Senior Advisor at the Aerospace Corporation. At USC Prof. Belz founded the Management of Innovation, Entrepreneurial Research, and Venture Analysis (MINERVA) research group to explore federal interventions in deep technology startups and, more recently, the labor market in deep-tech industries, including the semiconductor and defense sectors.

Previously she served as Division Director at the United States National Science Foundation, where she oversaw the agency's principal applied research activities and \$350 M in annual appropriations, funding a total of 1,000 startups. Earlier she served as the inaugural Vice Dean of Technology Innovation and Entrepreneurship at USC Viterbi. She spent ten years in the Mission Systems Concepts Division at NASA Jet Propulsion Laboratory while consulting to venture capital firms, startups, and innovative organizations such as Avery Dennison, BP, Caltech, the US National Academy of Engineering, Occidental Petroleum, and UCLA. A long-time member of the Pasadena Angels investment group, she represented them on the Board of Caltech laser spinoff Ondax for eight years, until its successful acquisition by Coherent (NASDAQ:COHR). She holds a PhD in physics from Caltech and a BS in physics from the University of Maryland at College Park. She currently serves as President of the IEEE Technology and Engineering Management (TEMS) Society.

Keynote 2 (cont'd)

"Public funding to cross the Valley of Death: Space as a laboratory"

Many innovations struggle to cross the so-called "Valley of Death" where they advance from technology development to deployment at scale, particularly in small businesses and startups. Government funding is an important resource for these firms, but outcomes are usually examined from the perspective of the recipient rather than the funding agency. Here we study the Small Business Innovation Research (SBIR) program, a model replicated throughout the world, as administered by the US National Aeronautics and Space Administration (NASA). We use the NASA SBIR program as a laboratory to examine the funding process and the public outcomes with tools from public policy and systems engineering as we integrate econometrics, Technology Readiness Level (TRL) assessments, optimization, and natural language processing (NLP). We report an integrated system view of the public funding ecosystem for small businesses and startups.

TECHNICAL VISIT

Technical Visit on Wed-10 Dec 2025

Swinburne University of Technology Digital Manufacturing Hub

Tentative Agenda: 9am to 12pm

Depart from Melbourne Convention & Exhibition Centre (MCEC)

Arrival and welcome briefing by Swinburne University representatives Guided Tour of Factor of the Future – A dedicated SUT facility for Industry 4.0/5.0

Presenting the ARC Digital Manufacturing Hub - a consortium of industry, universities and Australian Research Council focused on improving manufacturing productivity and competitiveness.

Arrival Back at MCEC

Terms

- AUD50 per person, cash only – pay at registration desk on Sun-7 Dec or Mon-8 Dec
- Registrations and payment are non-transferable
- There will be no refund for registration cancellation
- Participants agree to indemnify the IEEM2025 organizers and secretariat against any claims arising from injury or loss sustained during the outing
- Please know that participants are responsible for obtaining their own insurance and that this outing does not include insurance.
- Not suitable for children, participants must be at least 18 years old to be eligible

(As of 5 November 2025 — Subject to Change)

Supply Chain Management 1

2025-12-08 11:15 AM-01:00 PM 103

Session Chair(s): Hongrui LIU
San Jose State University
Samira ALVANDI
University of Technology Sydney

IEEM25-A-0006/Economics of 3d Printing-as-a-service: How Design Complexity Shapes Pricing Decisions

Tarun Jain^{*+1}, Jishnu Hazra¹, Ram Gopal²

¹Indian Institute of Management Bangalore, India

²Warwick Business School, The University of Warwick, United Kingdom

IEEM25-F-0129/Enhancing Export Performance of Maluku's Tuna Supply Chain: Insights from Field Observation and Literature Review

Muhamad Nuryadi^{*+1}, Koichi Murata¹

¹Nihon University, Japan

IEEM25-F-0155/Supply Chain Anomaly Detection by Using Simulation and Machine Learning

Tatsuya Inaba^{*+1}

¹Kanagawa Institute of Technology, Japan

IEEM25-F-0188/Designing Household Hydrogen Supply Chains in Australia Considering Market Conditions

Pranto Chakrabarty^{*1}, Sanjoy Kumar Paul², Andrea Trianni², Suvash Saha^{*1}

¹School of Mechanical and Mechatronic Engineering, University of Technology Sydney, Australia, Australia

²University of Technology Sydney, Australia

IEEM25-A-0082/Data-driven Blood Inventory Management at Hospital Level

Vida Yousefinezhad^{*+1}, Babak Abbasi¹, Zahra HosseiniFard², Mehdi Hosseinkouchack³

¹RMIT University, Australia

²The University of Melbourne, Australia

³EBS University, Germany

IEEM25-F-0457/Enablers for Digital Twin Adoption: People-process-technology Perspective

Nisakorn Somsuk¹, Tritos Laosirihongthong^{*+2}, Premaratne Samaranyake³, Michael McLean⁴

¹Department of Industrial Engineering, Rajamangala University of Technology Thanyaburi, Thailand

²Thammasat University, Thailand

³Western Sydney University, Australia

⁴Australian Graduate School of Leadership, Australia

IEEM25-F-0247/Evaluating the Effect of Supply Chain Management Practices on the Supply Chain Performance of SMEs in Lusaka's Manufacturing Sector

Bupe Gettrude Mutono Mwanza^{*+1}, Charles Mbohwa², Bupe Mwenya¹

¹University of Zambia, Zambia

²University of South Africa, South Africa

ORAL SESSIONS

Technology and Knowledge Management 1

2025-12-08 11:15 AM-01:00 PM 104

Session Chair(s): Aries SUSANTY
Diponegoro University
Qingsong ZHAO
Technical University of Denmark

IEEM25-F-0037/Drivers of Digital Technology Adoption in Msme: a Dematel and Ism Approach

Aries Susanty^{*+1}, Samuel Mierascu Junior Sihombing¹, Nia Budi Puspitasari¹

¹Diponegoro University, Indonesia

IEEM25-F-0046/Innovating Together: The Impact of External Collaboration on Thai Manufacturing Firms' Product and Process Innovation

Takron Opassuwan^{*1}, Wisuwat Wannamakok^{*2}

¹Faculty of Engineering, Chiang Mai University, Thailand

²Agro-industry, Chiang Mai University, Thailand

IEEM25-F-0122/Data-Driven Framework for Aligning R&D Strategy with Corporate Goals Using a Network-Based Roadmapping Approach

Günther Schuh¹, Alexander Keuper¹, Nikolai Kelbel^{*1}, Max Hamker¹, Eric Rebentisch², Matthias Sebastian Mertens^{*1}

¹RWTH Aachen University, Germany

²Massachusetts Institute of Technology - MIT, United States

IEEM25-F-0143/Systemization of Ecological and Economic Potential of Product Technologies within the Upgrade Circular Economy

Günther Schuh¹, Johanna Victoria Jacobi^{*+1}, Moritz Schwippert¹

¹Fraunhofer Institute for Production Technology IPT, Germany

IEEM25-F-0159/Approach for Enabling Second-Life Applications of Industrial Products

Günther Schuh¹, Marc Schauss^{*+2}, Tim Jeschek²

¹RWTH Aachen University, Germany

²Fraunhofer Institute for Production Technology IPT, Germany

IEEM25-F-0278/Improving Communication Through Modularity: A Study on the Role of Modular Product Architecture in the ETO Industry

Qingsong Zhao^{*1}, Miguel Vieira^{*2}, Georgios Konstantinos Kourtis¹, Vainö Karhunen³, Sérgio Tavares², Silvina Félix², Niels Henrik Mortensen¹, Lars Hvam¹

¹Technical University of Denmark, Denmark

²University of Aveiro, Portugal

³Tampere University, Finland

IEEM25-F-0199/Concept for Determining the Residual Value of Products in the Circular Economy based on the Digital Shadow

Günther Schuh¹, Julia Brenner^{*+2}

¹RWTH Aachen University, Germany

²Fraunhofer Institute for Production Technology, Germany

Production Planning and Control

2025-12-08 11:15 AM-01:00 PM 105

Session Chair(s): Xin LI
The Education University of Hong Kong
Daniel Y. MO
The Hang Seng University of Hong Kong

IEEM25-F-0141/Personalized Operator Assignment Method for Fair Workload Distribution in Industry 5.0 Job Shop Scheduling

Hudaifah Hudaifah^{*1}, Haitham H. Saleh¹

¹King Fahd University of Petroleum and Minerals, Saudi Arabia

IEEM25-F-0191/Deep Reinforcement Learning for Order-picking Optimization with Dynamic Order Arrivals in Express Centers

Daniel Y. Mo^{*1}, Y.P. Tsang², Yue Wang³, K.T. Chung², Carman Ka Man Lee²

¹The Hang Seng University of Hong Kong, Hong Kong SAR

²The Hong Kong Polytechnic University, Hong Kong SAR

³The Education University of Hong Kong, Hong Kong SAR

IEEM25-F-0388/Simulation Framework for Evaluating Pool Sequencing and Shop Floor Dispatching Rules In Disassembly

Patrick Jordan^{*1}, Haochi Zhang¹, Marc Wegmann¹, Lasse Streibel¹, Christina Reuter², Michael F. Zaeh²

¹Institute for Machine Tools and Industrial Management, School of Engineering and Design, Technical University of Munich, Germany

²Technical University of Munich, Germany

IEEM25-A-0130/Scheduling a Single Parallel-batching Machine with Run-to-run Constraints

Xiajie Yi^{*1}, Fan Yang², Dries Goossens³, Roel Leus⁴

¹IESEG School of Management, France

²Shanghai Normal University, China

³Ghent University, Belgium

⁴KU Leuven, Belgium

IEEM25-A-0150/Modeling and Simulation for Energy Intensity Optimization in Production Systems Using Digital Twin Technology

Hironori Hibino^{*1}

¹Nihon University, Japan

IEEM25-F-0352/A Hybrid Genetic Algorithm and Adaptive Large Neighborhood Search for Flexible Job Shop Scheduling with Fuzzy Processing Time

Budi Santosa^{*1}, Firda Hariri¹

¹Institut Teknologi Sepuluh Nopember, Indonesia

IEEM25-F-0093/Digital Technology Adoption and the Influence on Production Operator Performance

Nita Sukdeo^{*1}, Kemlall Ramsaroop Ramdass², Anban Pillai¹

¹University of Johannesburg, South Africa

²University of South Africa, South Africa

ORAL SESSIONS

Manufacturing Systems 1

2025-12-08 11:15 AM-01:00 PM 106

Session Chair(s): Harumi HARAGUCHI
Ibaraki University
Ran JIN
Virginia Tech

IEEM25-F-0056/Automated Parsing of Engineering Drawings for Structured Information Extraction Using a Fine-tuned Document Understanding Transformer

Muhammad Tayyab Khan^{*1}, Zane Yong², Lequn Chen¹, Jun Ming Tan², Wenhe Feng², Seung Ki Moon^{*1}

¹Nanyang Technological University, Singapore

²Advanced Remanufacturing and Technology Centre, A*STAR, Singapore

IEEM25-F-0068/Automated Wiring Harness Wrapping: An Innovative Spray Coating Process for Bundling, Encapsulation, and Protection

Niklas Piechulek^{*1}, Alexander-Maximilian Mahr¹, Patrick Bründl¹, Huong Giang Nguyen¹, Jörg Franke¹

¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Institute for Factory Automation and Production Systems (FAPS), Germany

IEEM25-F-0088/Influence of Laser Power in Wire DED-LB/M On Machinability in Robotic Hybrid Manufacturing

Jan Schachtsiek^{*1}, Damian Haske¹, Cemal Esen¹, Andreas Ostendorf¹, Bernd Kuhlenkötter¹

¹Ruhr-University Bochum, Germany

IEEM25-F-0094/A Template Method for Installing State Inspection of Cable Harness Assembly Based on Residual Convolutional Neural Network

Junfeng Wang^{*1}, Shiwen Zhao², Cong Lu³, Dongqing He³, Xizhao Cao³, Zhaoyong Zeng⁴

¹Huazhong University of Science and Technology, China

²Goertek Incorporated, Weifang, China, China

³Sichuan Gas Turbine Research Establishment, China

⁴Shanghai Radio Equipment Research Institute, China

IEEM25-A-0239/System Reliability Evaluation on Semiconductor Manufacturing System Considering Workload and Unscheduled Downtime

Yu-Zhong Kang^{*1}, Yi-Kuei Lin¹, Cheng-Ta Yeh²

¹National Yang Ming Chiao Tung University, Taiwan

²Fu Jen Catholic University, Taiwan

IEEM25-A-0031/Privacy-preserving Data Sharing in Manufacturing Industrial Internet

Yingyan Zeng¹, Xiaona Zhou², Premith K. Chilukuri³, Ismini Lourentzou², Ran Jin^{*2,3}

¹University of Cincinnati, United States

²University of Illinois Urbana-Champaign, United States

³Virginia Tech, United States

IEEM25-F-0162/Development and Usability Evaluation of an AR-Based Assembly Support System

yuuto kiuchi^{*1}, Harumi Haraguchi^{*2}, Takeshi Shibata²

¹Graduate School of Science and Engineering, Ibaraki University, Japan

²Ibaraki University, Japan

Service Innovation and Management 1

2025-12-08 11:15 AM-01:00 PM 107

Session Chair(s): Say Wei FOO
Nanyang Technopreneurship Centre

IEEM25-F-0043/Bridging the Gap Between Client Expectations and Perceptions of Service Quality: Insights from It Employees to Better Understand Client Needs

Venkateswarlu Nalluri¹, Sai Manideep Appana², Jing-Rong Chang¹, Long-Sheng Chen^{2,3}, Sripathi Kalvakolanu⁴

¹Chaoyang University of Technology, Taiwan

²Vignan's Foundation for Science, Technology and Research, India

³National Taipei University of Technology, Taiwan

⁴Symbiosis International (Deemed University), India

IEEM25-F-0095/Exploring Users' Algorithmic Paradox in Intelligent Recommendation Services: The Impact of Platform-level Factors and Psychological Perceptions

Jinghan Zhang¹, Linjing Wang¹

¹Northwestern Polytechnical University, China

IEEM25-F-0149/Quantitative Evaluation of the Developer-centric Approach in the Microcontroller Board Market

MASAKAZU TAKASU¹, Junichi Akita¹, Shunichi Ohmori², Kanetaka M Maki², Tomomi Kito²

¹KANAZAWA University, Japan

²Waseda University, Japan

IEEM25-F-0281/Service Innovation Model: A Framework for Systematic Innovation

PUKAR JUNG KUNWAR¹, Jukka Majava², Janne Harkonen¹

¹University of Oulu, Finland

²Industrial Engineering and Management / University of Oulu, Finland

IEEM25-F-0404/Enhancing Sustainable Tourism Industry Performance Through Open Innovation, Innovation Capability, and Organizational Creativity in Indonesian Tourism Villages

Augustina Asih Rumanti¹, Ishfahan Dzilalin Nuha¹, Muhammad Almaududi Pulungan¹, Fadel Muhammad²

¹Telkom University, Indonesia

²University of Melbourne, Australia

IEEM25-A-0145/Does Collaboration with Other-persona AI Enhance Creative Productivity? – Countering Sycophancy Through the Introduction of External Perspectives

Kyosuke Hino¹, Hajime Sasaki², Kouya Kitagawa³, Hiroshi Maruyama³, Hiroyuki Matsuyama³

¹DENTSU INC., Japan

²The University of Tokyo, Japan

³Dentsu Group Inc., Japan

IEEM25-A-0266/Modeling and Analysis of Life Cycle Carbon Footprint of Li-ion Batteries for Electric Vehicles

Jingshan Li¹, Shuo Zhang¹, Qing Wang¹

¹Tsinghua University, China

ORAL SESSIONS

Quality Control and Management 1

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Session Chair(s): **Amitava MUKHERJEE**
 XLRI - Xavier School of Management
 Sakchai RAKKARN
 Kasem Bundit University

IEEM25-F-0030/Offline Reinforcement Learning Under Selective Dataset Constraints for Steel Quality Optimization

Yue Huang^{*1}, Zhen Chen^{*1}, Di Zhou², Ershun Pan¹

¹Shanghai Jiao Tong University, China

²Donghua University, China

IEEM25-F-0052/An Integrated Framework for Mahalanobis-Taguchi System (MTS)-based Multivariate Process Control with Varied Response Dimensionality

Nainsi Gupta^{*+1}, Indrajit Mukherjee¹

¹Indian Institute of Technology, Bombay, India

IEEM25-A-0016/Some Change-point Design-based Distribution-free Approaches for Monitoring High-dimensional Data

Amitava Mukherjee^{*+1}

¹XLRI - Xavier School of Management, India

IEEM25-F-0123/A Study on the Generation of Supersaturated Experimental Designs and Comparison of Prediction Accuracy

Kie Nakayama^{*+1}, Hiroki Iwamoto¹, Yasushi Nagata¹

¹Waseda University, Japan

IEEM25-F-0163/Comparison of Dimensional Reduction Methods of Body-sound Data for Unsupervised Anomaly Detection in Powder Pressing

Nils Niedernostheide^{*+1}, Olcay Özgün¹, Christopher Prinz¹, Bernd Kuhlentkötter¹

¹Ruhr-University Bochum, Germany

IEEM25-F-0185/Functional Data Analysis Based on the MT System

Kai Wa Vong^{*+1}, Hiroki Iwamoto¹, Yasushi Nagata¹

¹Waseda University, Japan

IEEM25-F-0517/Optimizing Coating Parameters to Minimize Waste in Tim Tpm 7000 Production for Electronic Components

Sakchai Rakkarn^{*+1}, Sunan Tana¹, Bhawat Chaichannawatik¹, Suniti Suparp²

¹Kasem Bundit University, Thailand

²Srinakharinwirot University, Thailand

Intelligent Systems 1

2025-12-08 11:15 AM-01:00 PM 111

Session Chair(s): **Zhipeng ZHANG**
Shanghai Jiao Tong University
Wen-Lung TSAI
National Taipei University of Business

IEEM25-A-0034/A Rag-based Campus Intelligent Assistant Application: A Preliminary Study

Wen-Lung Tsai^{*+1}

¹*National Taipei University of Business, Taiwan*

IEEM25-F-0187/Consideration of Topic Extraction in Lyrics Search Required by Users

Kanon Yukimura^{*+1}, Takashi Ito¹, Takahiro Nishigaki², Takasi Onoda¹

¹*Aoyama Gakuin University, Japan*

²*Takushoku University, Japan*

IEEM25-F-0034/A Knowledge Assistant for Semiconductor Fault Diagnosis Using an Llm-enhanced Case-based Reasoning Framework

Hyunseop Park^{*+1}, Hyungjae Yoo¹, Junho Lee¹, Jaegun Kim¹, Hyunwoo Cha¹, Minah Park¹, Davin Lee¹, Sungmin Cho¹, Euisuk Kum¹

¹*Samsung Electronics, Korea, South*

IEEM25-A-0216/Simulation-based Data-driven Surrogate Modeling to Predict System Performance

Seungyon Cho⁺¹, Seung Ki Moon^{*1}

¹*Nanyang Technological University, Singapore*

IEEM25-F-0151/Machine Learning-Based Noise Classification for Automotive Power Seat DC Motors Using Multi-Feature Representations from Accelerometer Data

Willy Dharmawan^{*+1}, Haitham H. Saleh¹, Nur Hamid¹, Sami El-Ferik¹, Muhammad Yusha Firdaus², Choesnul Jaqin³

¹*King Fahd University of Petroleum and Minerals, Saudi Arabia*

²*Research Center for Process and Manufacturing Industry Technology BRIN, Indonesia*

³*Mercu Buana University, Indonesia*

IEEM25-F-0289/Programming Languages and Tools for AI and Data Science Professionals in Johannesburg

Timilehin Olaokun¹, Judith Nkuna¹, Anup Pradhan^{*+1}

¹*University of Johannesburg, South Africa*

ORAL SESSIONS

Big Data and Analytics 1

2025-12-08 11:15 AM-01:00 PM 112

Session Chair(s): Seonghyeon MOON
Gyeongsang National University
Obafemi OLATUNJI
University of Johannesburg

IEEM25-F-0120/Study on Automatic Pitch-type Classification System for MLB Pitchers Using Performance Change Detection

Takahiro Furuya^{*†1}, Hiroki Iwamoto¹, Yasushi Nagata¹
¹Waseda University, Japan

IEEM25-F-0284/Analysis of Cryptocurrency Safety Via Time-series Analysis and Feature-based Classification

Hiroki Igarashi^{*†1}, Takashi Hasuike¹
¹Waseda University, Japan

IEEM25-F-0306/Addressing Unbalanced Data Through Generative Ai in High-pressure Die Casting Fault Diagnosis

Amr Dahab^{*†1}, Kevin Otto¹, Wen Li¹, Tansu Alpcan¹, Karthik Sankaranarayanan²
¹The University of Melbourne, Australia
²Nissan Motor Corporation, Australia

IEEM25-F-0212/Hybrid Data Pipeline Architecture for Non-destructive Quality Prediction in Laser Brazing Using Image and Time Series Data

Günther Schuh¹, Alexander Keuper¹, Felix Stein^{*†1}
¹RWTH Aachen University, Germany

IEEM25-F-0259/Task-Based Forecast Evaluation for Model Selection in Make-To-Order Manufacturing

Marius Syberg^{*†1}, Lucas Polley², Jochen Deuse³
¹RIF Institute for Research and Transfer e.V., Germany
²TU Dortmund, Germany
³University of Technology Sydney, Australia

IEEM25-F-0343/Enhancing Cosmetic Review Clustering with Independent Topic Analysis and Word Embedding

Takahiro Nishigaki^{*†1}, Yui Sudo², Takashi Ito², Takasi Onoda²
¹Takushoku University, Japan
²Aoyama Gakuin University, Japan

IEEM25-F-0532/A data-driven LSTM Modelling Approach for Cumulative Biogas Yield from FFV Feedstock

Obafemi Olatunji^{*†1}, Paul Adedeji¹, Nickey Janse van Rensburg¹, Nkosinathi Madushele¹
¹University of Johannesburg, South Africa

Supply Chain Management 2

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Session Chair(s): Meimei ZHENG
Shanghai Jiao Tong University
Naly RAKOTO
IMT Atlantique

IEEM25-F-0235/Dual-objective Optimization of Cold-chain Vehicle Routing Problem Considering Transportation Cost and Carbon Emission

Chaofan Wang^{*1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-F-0254/Evolution and Future Research Trajectories of Carbon Capture Utilization and Storage (CCUS) in Indonesia

Sholeh Ma'mun^{*1}, Bertha Maya Sopha^{*2}, Muhammad Arif Wibisono², Inna Kim³

¹Universitas Islam Indonesia, Yogyakarta, Indonesia, Indonesia

²Universitas Gadjah Mada, Indonesia

³SINTEF Industry, Norway

IEEM25-F-0255/Exploring Behavioral Interventions Toward Electronic Waste Recycling Using Comprehensive Action Determination Model

Annissa Novelinda Putriyani¹, Bertha Maya Sopha^{*1}, Naly Rakoto², Muhammad Arif Wibisono¹

¹Universitas Gadjah Mada, Indonesia

²IMT Atlantique, France

IEEM25-F-0279/A System Dynamics Approach to Explore the Relationship of Infrastructure and Policy Challenges and Their Impact on CNG And LNG Supply Chain Management: A Case Study of Indonesia

Dliyaa Ul Haq^{*1}, Bertha Maya Sopha¹, Wangi Pandan Sari¹

¹Universitas Gadjah Mada, Indonesia

IEEM25-F-0288/Automation of Cold Storage Warehouses: Implementing Robotic Arms for Efficient Truck Loading

Sasindu Gunasekara¹, Amila Thibbotuwawa^{*1}, Sachith Lakshitha¹, Izabela Nielsen², Dilina Kosgoda³

¹University of Moratuwa, Sri Lanka

²Aalborg University, Denmark

³University of Sydney, Australia

IEEM25-F-0157/Challenges to GenAI Adoption in E-waste Management

Towfique Rahman^{*1}, Md. Abdul Moktadir², Sanjoy Kumar Paul³, Syed Mithun Ali⁴

¹Griffith University, Australia

²Institute of Leather Engineering & Technology, University of Dhaka, Dhaka, Bangladesh, Bangladesh

³University of Technology Sydney, Australia

⁴Department of Industrial and Production Engineering, Bangladesh University of Engineering & Technology, Bangladesh, Bangladesh

IEEM25-A-0204/Strategic Implications of Adopting Circular Strategies in Manufacturing: A Game Theoretical Approach

Ritesh Deore^{*1}, Shipra Pandey¹

¹Prestige Institute of Global Management, Indore, India

ORAL SESSIONS

Technology and Knowledge Management 2

2025-12-08 02:00 PM-03:30 PM 104

Session Chair(s): Yan-Ling CAI
Zhengzhou University
Tae-Eun KIM
University of Tromsø

IEEM25-F-0208/Concept for a Data-based Identification of Product Configuration s in Machinery and Plant Engineering

Lennard Knobel^{*1}, Alexander Keuper¹, Günther Schuh¹

¹RWTH Aachen University, Germany

IEEM25-F-0221/Measuring Firm-level Innovation Resilience in R&D Networks

Yuheng Huang^{*1}, Naiding Yang², Junfan Zhai², Chenxi Dong¹

¹School of Management, Northwestern Polytechnical University, China

²Northwestern Polytechnical University, China

IEEM25-F-0224/Experimental Investigations on F- Mode / Discharging of Modified Reversible Pem Fuel Cell with Integrated Carbon Nitride as Electrode

Perminder Jit Singh^{*1}, Surjeet Singh², Amandeep Oberoi³, Puneet Chawla⁴

¹Punjab Engineering College, India

²U.i.E.T. Panjab University Chandigarh, India

³Thapar Institute of Engineering and technology Patiala, India

⁴Punjab Engineering College, Chandigarh, India

IEEM25-F-0253/Esg Strategy Influences on a Firm's Innovation Performance: The Moderating Role of a Firm's Network Position

Ming-Chao Wang^{*1}, Pei-Chen Chen²

¹Yuan Ze University, Taiwan

²Department of Business Administration, Tainan University of Technology, Taiwan

IEEM25-F-0265/A Data-driven Framework for Strategic International Collaboration: A Case of Korea-United Kingdom Cooperation

Joonwoo Baik^{*1}, Jaehyun Hwang¹, Dohyun Yang¹, Jeewon Lee¹, Seokho Chi^{*1}

¹Department of Civil and Environmental Engineering, Seoul National University, Korea, South

IEEM25-A-0173/A Classification of University Capacity for Implementing the Sustainable Development Goals (SDGS)

Hyewon Hwang^{*1}, Gaeun Kim¹, Jeonghwan Jeon^{*1}

¹Gyeongsang National University, Korea, South

Information Processing and Engineering

2025-12-08 02:00 PM-03:30 PM 105

Session Chair(s): Janne HARKONEN
University of Oulu
Seung Ki MOON
Nanyang Technological University

IEEM25-F-0092/Collaborative Multi-Agent Reasoning with Process Reward Model

Shih-Wen Ke^{*+1}, Po-Hsiu Cheng¹, Po-Chun Chang¹, Bing-Ruei Zou¹

¹*National Central University, Taiwan*

IEEM25-F-0136/Time Series Object Detection with Periodic Boundary Persistent Homology

Haruhisa Oda^{*+1}

¹*The University of Tokyo, Japan*

IEEM25-F-0203/Towards AI Agents in Product Structure Management: A Scoping Review on Productization and Lifecycle Logic

Janne Harkonen^{*+1}, Tuomas Kotilainen², Akwasi Adusei²

¹*University of Oulu, Finland*

²*Industrial Engineering and Management, University of Oulu, Finland*

IEEM25-F-0328/Research on Dual-loop Optimization Method for Steam Generator Control System Performance Based on Random Forest Algorithm

Yuxuan Xie^{*1}, Xiaoyu Li¹, Xiangsong Kong^{*1}, Yimin Zeng¹, Weiming Chen¹

¹*Xiamen University of Technology, China*

IEEM25-F-0475/Toward Semantic-aware Query Retrieval: Contextual Analysis and Prompt Optimization for the Government Research Bulletin (GRB) System in Taiwan

ChiaYi Chuang^{*+1}, Tzu-Yu Lin², Yu-Chun Chang³

¹*STPI, National Institutes of Applied Research, Taiwan*

²*Graduate Institute of Library, Information & Archival Studies, National ChengChi University, Taipei, Taiwan*

³*Science & Technology Policy Research and Information Center, National Institutes of Applied Research, Taipei, Taiwan*

IEEM25-A-0048/Rapid Modelling of Environmental Impacts of Products and Supply Chains

Petri Helo^{*+1}, Bening Mayanti¹

¹*University of Vaasa, Finland*

ORAL SESSIONS

Manufacturing Systems 2

2025-12-08 02:00 PM-03:30 PM 106

Session Chair(s): **Aries SUSANTY**
 Diponegoro University
 Om Prakash YADAV
 North Carolina Agricultural and Technical State University

IEEM25-F-0147/Delphi-based Mapping of the Impact of Preventive Measures on Error-influencing Factors within Manual Assembly Lines

Bjoern Klages^{*1}, Linus Heller¹, Christina Reuter¹, Michael F. Zaeh¹

¹*Technical University of Munich, Germany*

IEEM25-F-0166/Combinatorial Bees Algorithm with 2-parameters for Punching Path Optimization

Vijay Rathod¹, Om Prakash Yadav^{*2}, S.P. Kadam¹, Ajay Pal Singh Rathore³

¹*Government Polytechnic, India*

²*North Carolina Agricultural and Technical State University, United States*

³*Malaviya National Institute of Technology, India*

IEEM25-A-0032/Scheduling Adjustment in Precision Manufacturing under Equipment Disturbances

Yi-Chun Peng^{*1}, Jia-Rong Kang², Kuan-Wei He^{*1}, Ping-Chien Chen¹, Jo-Chi Chao¹

¹*Department of Industrial and Systems Engineering, Chung Yuan Christian University, Taiwan*

²*Department of Information Management, Tatung University, Taiwan*

IEEM25-F-0207/Data Acquisition Approaches for Compensation Algorithms in Automated Water Electrolyzer Assembly

Simon Krieger^{*1}, Lukas Christ¹, Malte Jakschik¹, Daniel Syniawa¹, Kian Bahri¹, Patrick Adler¹, Bernd Kuhlentötter¹

¹*Ruhr University Bochum, Germany*

IEEM25-F-0258/Evaluation of a Methodology for a Change-Specific and Company-Individual Manufacturing Change Management – Industrial Application, Requirement Fulfilment, and Cost-Benefit Analysis

Jan-Philipp Rammo^{*1}, Jennifer Graf¹, Clément Roumegoux Rouvelle¹, Michael Atzenbeck², Bjoern Klages^{*1}, Michael F. Zaeh¹, Christina Reuter¹

¹*Technical University of Munich, Germany*

²*J.M. Voith SE & Co. KG, Germany*

IEEM25-F-0274/Exploring the Impact of Social Responsibility, Expected Business Profit, Entrepreneurship Identity, Halal Integrity, and Implementation of Halal Orientation Among Central Java Food and Beverage SMEs

Aries Susanty^{*1}, Doly Satria Rajagukguk¹, Nia Budi Puspitasari¹

¹*Diponegoro University, Indonesia*

Engineering Education and Training 1

2025-12-08 02:00 PM-03:30 PM 107

Session Chair(s): Carman Ka Man LEE
The Hong Kong Polytechnic University
Steven JIANG
North Carolina Agricultural and Technical State University

IEEM25-F-0035/A Game-based Learning Framework to Enhance Student Engagement and Knowledge Gain in Operations Research Education

Zhonghao Zhao¹, Carman Ka Man Lee¹, Haonan Wang¹, Zhefan Hou¹
¹The Hong Kong Polytechnic University, Hong Kong SAR

IEEM25-F-0076/Entrepreneurship and Learning in Tech Universities: Revisiting the Theory of Planned Behaviour

Jen-Chia Chang¹, Tzu-Ning Yu¹
¹National Taipei University of Technology, Taiwan

IEEM25-F-0118/International Expansion of Flying Robot Design and Production Class at Nagoya and Gifu Universities

Susumu Hara^{1,2}, Kazuaki Ito²
¹Nagoya University, Japan
²Gifu University, Japan

IEEM25-A-0009/Integrating Problem & Project-based Learning with Design Thinking for Higher Education

Deepak Laxmanrao Waikar¹, Saroj Deepak Waikar²
¹IEEE Education Society Chapter, Singapore
²Premier Institution, Singapore

IEEM25-F-0290/Proposal of a Fingering Estimation Method for Piano Beginners Combining Svm and Dp

Takahiro Nishigaki¹, Toshihiro Tomizuka¹
¹Takushoku University, Japan

IEEM25-A-0102/Developing a Student Satisfaction Scale for Engineering Education

Ishita Sar¹, Shubhobrata Bhattacharya²
¹SRM University-AP, India
²Senior Training Engineer, India

ORAL SESSIONS

Decision Analysis and Methods 1

2025-12-08 02:00 PM-03:30 PM 108

Session Chair(s): Ziaul Haque MUNIM
University of South-Eastern Norway
Anup PRADHAN
University of Johannesburg

IEEM25-F-0156/Forecast-driven and Simulation-based Decision Support for Weather-sensitive Project Scheduling

Sebastian Eberlein^{*1}, Susanne Schukraft¹, Jan-Frederik Uhlenkamp¹, Abdul Rehman Sair¹, Michael Freitag¹
¹Bremer Institut für Produktion und Logistik GmbH at the University of Bremen, Germany

IEEM25-F-0198/A Decision-making Tool for a Criteria-based Selection of Process Maturity Models in Industry

Jens Kiefer^{*1}, Jana Zöld¹, Christoph Zöllner¹, Christian Moser²
¹University of Applied Sciences Ulm, Germany
²A. Loacker Spa/AG, Italy

IEEM25-F-0271/A Vector-based Extension of the Taguchi's T-method for Directional Data Analysis

YUGA TAKAO^{*1}, Hiroki Iwamoto¹, Yasushi Nagata¹
¹Waseda University, Japan

IEEM25-F-0481/A Methodology for Scenario-based Narrowing of Technical Solution Spaces Under Uncertainty with a Focus on Ecological Sustainability

Matthias Sebastian Mertens^{*1}, Alexander Keuper¹, Günther Schuh¹
¹RWTH Aachen University, Germany

IEEM25-F-0027/Optimizing DRAM Chip Treatment Selection by Enhanced Robust Reinforcement Learning with Decision Regime in Progressive Decision-making Data.

Hyoyoun Yi^{*1}
¹Samsung Electronics, Hwaseong, Republic of Korea, South

IEEM25-F-0211/Intelligent Quality Management in Industrial Screwing Processes: From Rule-Based Control to Data-Driven Paradigms

Nikolai West^{*1}, Michelle Henkies¹, Robert Mura¹, Jochen Deuse¹
¹RIF Institute for Research and Transfer, Germany

Reliability and Maintenance Engineering

2025-12-08 02:00 PM-03:30 PM 111

Session Chair(s): **Ripon K. CHAKRABORTTY**
UNSW Canberra

IEEM25-F-0146/Comparative Study of Lime, Shap and Shap Interaction Quantification for Improved FMEA Development in Energy-Based Maintenance

Corentin Ferreira^{*†1}, Kevin Otto¹, Wen Li¹, Boris Eisenbart²

¹*The University of Melbourne, Australia*

²*Swinburne University of Technology, Australia*

IEEM25-F-0331/Two-phase Gaussian Processes Framework for Accelerated Degradation with Change-point

Siyi Chen^{*1}, Yuan Li², Min Xie¹, Qingpei Hu^{*3}

¹*City University of Hong Kong, Hong Kong SAR*

²*State Key Laboratory of Mathematical Sciences, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China*

³*Chinese Academy of Sciences, China*

IEEM25-F-0323/A Data-driven Framework for Predictive Maintenance to Enhance Supply Chains Resilience Across Industrial Systems

Mariam Mhiri^{*1}, Mohamed Kharbeche¹, Mohamed Haouari^{*1}

¹*Qatar University, Qatar*

IEEM25-F-0263/From Fragmentation to Framework: Advancing Iot Enabled Asset Management in the Rail Sector

Samira Alvandi^{*†1}, Putu Dana Karningsih²

¹*University of Technology Sydney, Australia*

²*Institut Teknologi Sepuluh Nopember, Indonesia*

IEEM25-F-0395/Improving Critical Line “up” time at a Beverage Manufacturer

Arian Hamedseyedhosseini^{*†1}, Huanjun Chen¹, Joshua Gatchalian¹

¹*The University of Melbourne, Australia*

IEEM25-F-0515/Increasing Maintenance Efficiency in Urban Rail Systems: a Proactive Approach Using Time Series Forecasting

Suniti Suparp^{*1}, Sakchai Rakkarn^{*2}, Jessada Mutujad²

¹*Srinakharinwirot University, Thailand*

²*Kasem Bundit University, Thailand*

ORAL SESSIONS

Big Data and Analytics 2

2025-12-08 02:00 PM-03:30 PM 112

Session Chair(s): Seonghyeon MOON
Gyeongsang National University
Obafemi OLATUNJI
University of Johannesburg

IEEM25-F-0387/Table Structure-Aware Learning for Handwritten OCR Correction in Noisy Industrial Documents

Jeonghwa Hong¹, Sangyeol Yu¹, Jinwoo Kim², Junhyeok Park³, Seonghyeon Moon⁴

¹School of Industrial Systems Engineering, Gyeongsang National University, Korea, South

²Department of Civil and Environmental Engineering, Hanyang University, Seoul, Korea, South

³Korea Institute of Geoscience and Mineral Resources (KIGAM), Daejeon, Korea, South

⁴Gyeongsang National University, Korea, South

IEEM25-F-0430/Dashboard Development and Aspect-based Sentiment Analysis for a Case-study Tour Operator in Thailand

Peerapol Chavalpatanapan¹, Peerawit Phlaingam¹, Naragain Phumchusri^{1,2}

¹Department of Industrial Engineering, Faculty of Engineering, Chulalongkorn University, Thailand

²Chulalongkorn University, Thailand

IEEM25-F-0439/Interpolation Under Limited Training Data Using Grey-kriging Regressor: Study Case of Taiwan Air Quality Prediction

Angela Hsiang-Ling Chen¹, Yun-Chia Liang², Sebastian Gunawan¹

¹Chung Yuan Christian University, Taiwan

²Yuan Ze University, Taiwan

IEEM25-F-0511/Highly Censored Reliability Big Data Analysis: Hard Disk Case Revisited

Yuqi Yang¹, Qingpei Hu^{1*}, Chengjie Wang²

¹Chinese Academy of Sciences, China

²School of Science, Jiangnan University, China

IEEM25-F-0366/Robust Unsupervised Video Foreground Segmentation Via Penalized Bayesian Tensor Factorization

Shenghao Xia¹, Jian Liu^{1,2}, Yinwei Zhang², Biao Zhang³

¹Bowling Green State University, United States

²The University of Arizona, United States

³ABB Inc., United States

IEEM25-F-0040/Sam-ocr: Enhancing Maritime Object Segmentation with the Segmentation Anything Foundation Model

Zhenming Wu¹, Haiying Jia², Bing Wang³

¹SNF - Center for Applied Research at Norwegian School of Economics, Norway

²Norwegian School of Economics, Norway

³Informatics Research Centre, University of Reading, United Kingdom

Supply Chain Management 3

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Session Chair(s): Sixiang ZHAO
Shanghai Jiao Tong University
Linda ZHANG
IÉSEG School of Management

IEEM25-F-0384/Visual Analytics for Global Supply Chain Decision-making: a Tariff-responsive Tool for Managers and Policymakers

Muntaser Nuttah^{*1}, Oksana Holomsha¹, Hatem Algabroun¹, Claudio Linhares¹

¹Linnaeus University, Sweden

IEEM25-F-0402/Multi-Tier Logistics Network Optimization for Home Appliance Supply Chains

Yuan Zhan^{*1}, Lingling Qin¹, Sixiang Zhao^{*1}, Yangming Zhou¹

¹Shanghai Jiao Tong University, China

IEEM25-F-0407/Resilient Supplier Selection with Supplier Fortification in the Presence of Multiple Manufacturers Using Mixed Recovery Profile

Praveen Kumar^{*1}, Lohithaksha M Maiyar^{*2}, D.G. Mogale³

¹Indian Institute of Technology Hyderabad, India

²Department of Entrepreneurship and Management, IIT Hyderabad, Sangareddy, India

³Cardiff Business School, UK, United Kingdom

IEEM25-F-0465/A Simulation-based Framework for Enhancing Supply Network Resilience

Chandimal Adikari Adikari Mudiyansele^{*1}, Senevi Kiridena¹, Quan Zhou¹

¹University of Wollongong, Australia

IEEM25-F-0325/Optimized Platelet Supply Chain Coordination: A Reinforcement Learning Framework

Shahrzad Valizadeh^{*1}, Babak Abbasi², Zahra HosseiniFard³, Su Nguyen⁴

¹PhD student, Australia

²RMIT University, Australia

³The University of Melbourne, Australia

⁴Professor, Australia

IEEM25-F-0219/Improving Circularity in Brewing Through Data Spaces: A Case Study in Carbon Footprint Allocation

Jan Buescher^{*1}, Victoria Pohl², Daniel Ditterich², Lucas Fochler³, Jochen Deuse⁴, Rene Woestmann⁵, Florian Hoffmann⁵, Colin Kim Mueller⁵

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³Estainium Association, Germany

⁴RIF Institute for Research and Transfer, Germany

⁵Institute for Production Systems, Germany

IEEM25-A-0240/A Resilient Bi-level Robust Possibilistic Programming Framework for Sustainable Post-disaster Debris Supply Chain Management Under Epistemic Uncertainty

Muhammad Tayyab^{*1}

¹King Fahd University of Petroleum and Minerals, Saudi Arabia

ORAL SESSIONS

Technology and Knowledge Management 3

2025-12-08 04:00 PM-06:00 PM 104

Session Chair(s): **Tae-Eun KIM**
University of Tromsø
Dilupa NAKANDALA
Western Sydney University

IEEM25-F-0321/The Moderating Role of Sustainability Orientation on the Impact of Industry 4.0 Technologies on Performance

Dilupa Nakandala^{*†1}, Niranga Silva¹, Muhammad Asif¹

¹Western Sydney University, Australia

IEEM25-F-0335/From Research to Market: A Recontextualization Lens on Milestone-Based Framework for Advancing University Innovation

Nattida Tachaboon^{*†1}, Thitiwat Piyatamrong²

¹Chiang Mai University, Thailand

²University College London (UCL), United Kingdom

IEEM25-F-0354/Quantifying the Hype Cycle: Data-driven Mapping for Identifying Emerging Technologies

Woojin Choi^{*†1}, Youngjung Geum^{*†1}

¹Seoul National University, Korea, South

IEEM25-F-0401/Key Industry 4.0 Technologies for Sustainable Built Environments: A Scope Review of Technology Integration and Its Impacts on Sustainability

Filipe Machado-Duarte^{*†1}, António Amaral², Nelson Duarte³, Madalena Araújo^{*†4}

¹University of Minho - School of Engineering - Department of Production and Systems - ALGORITMI Research Centre, Portugal

²Department of Mechanical Engineering, ISEP-Polytechnic Institute of Porto, Portugal

³ESTG-Polytechnic Institute of Porto, Portugal

⁴University of Minho, Portugal

IEEM25-F-0139/How the Company Learned from Failure Using Its Internal Knowledge Repository

Sanetake Nagayoshi^{*†1}, Jun Nakamura²

¹Shizuoka University, Japan

²Chuo University, Japan

IEEM25-F-0197/Methodology for KPI Integration in Manufacturing to Enable the Circular Economy

Günther Schuh¹, Julia Brenner^{*†2}, Nicolas Will³

¹RWTH Aachen University, Germany

²Fraunhofer Institute for Production Technology, Germany

³Fraunhofer Institute für Produktionstechnologie, Germany

IEEM25-F-0304/Advances in Nanostructured Materials for Energy Storage Applications: A Materials Science and Engineering Perspective

OLUSEGUN ADIGUN AFOLABI^{*†1}, Oludolapo Olanrewaju¹

¹Durban University of Technology, South Africa

Operations Research 1

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Session Chair(s): **Mingyao QI**
 Tsinghua University
 Amirhossein MOSTOFI
 Auckland University of Technology

IEEM25-F-0090/An Adaptive Genetic Algorithm for the Steel Plate Yard Inbound Problem Considering Plate Size

Lebao Wu^{*1}, Zuhua Jiang²
¹*Shanghai Maritime University, China*
²*Shanghai Jiao Tong university, China*

IEEM25-F-0127/Container Tractor and Chassis Operation with Temporary Storage Depot Close to Marine Terminal Gate

Hikaru Takashima^{*1}, Etsuko Nishimura¹, Koichi Shintani²
¹*Kobe University, Japan*
²*Tokai University, Japan*

IEEM25-F-0174/Off-site Battery Swapping Traveling Salesman Problem: A Logic-based Benders Decomposition Reformulation and Exact Algorithm

Rui Luo^{*1}, Ziyu Wang¹, Xinhao Cui², Shuai Jia^{*1}
¹*The Hong Kong University of Science and Technology (Guangzhou), China*
²*Beihang University, China*

IEEM25-F-0317/DEA-Based Performance Assessment of Teams in the 2024-2025 European Volleyball Women's Champions League

Xu Wang^{*1}, Tengfei Shao², Takashi Hasuike³
¹*Gunma University, Japan*
²*Global Education Center, Waseda University, Japan*
³*Waseda University, Japan*

IEEM25-F-0318/Improvement Targets Setting Via Convex Combinations of Efficient DMUs in DEA-R

Xu Wang^{*1}, Hiroki Iwamoto², Takashi Hasuike²
¹*Gunma University, Japan*
²*Waseda University, Japan*

IEEM25-F-0313/Monthly Pharmaceutical Demand Forecasting Using Statistical Holt Winters Model and Machine Learning-based Prophet Model

Kaushik Nag^{*1}, Magdy Helal²
¹*College of Engineering and Technology, American University of the Middle East, Egaila 54200, Kuwait*
²*American University of the Middle East, Kuwait*

IEEM25-F-0079/Social Project Portfolio Selection in a Public Project-based Organization for Infrastructural Development

Akinlo Mogbojuri^{*1}, Oludolapo Olanrewaju¹
¹*Durban University of Technology, South Africa*

ORAL SESSIONS

Project Management

2025-12-08 04:00 PM-06:00 PM 106

Session Chair(s): Norbert TRAUTMANN
University of Bern
Peijun GUO
Yokohama National University

IEEM25-F-0150/Applying Dynamic Focus Programming to Sequential Investment Decisions in Urban Real Estate

Peijun Guo^{*1}, Bilal Dia²

¹Yokohama National University, Japan

²Graduate School of International Social Sciences, Yokohama National University, Japan

IEEM25-F-0277/The Synergistic Relationship of Knowledge Reuse and Big Data Analytics in Enhancing Project Portfolio Success

He Zhai¹, Min Guo^{*2}, Sijun Bai¹

¹Northwestern Polytechnical University, China

²College of Economic & Management, Xi'an University of Posts & Telecommunications, China

IEEM25-A-0249/Iwp-Oriented Safety Management Information System for Plant Construction Using a Langchain-based Rag Model

Seung Yong Kim^{*1}, Wooyong Jung¹

¹KEPCO International Nuclear Graduate School, Korea, South

IEEM25-F-0458/Adopting Open-source Software Components in Information Systems Development Projects: An Analysis of Software Quality and Design Principles

Younes Benslimane^{*1}, Zijiang Yang¹, Grace Liu²

¹York University, Canada

²Bayview Secondary School, Canada

IEEM25-A-0106/Proposal of a Tourism Planning Model Based on Tourist Circulation Behavior in Destinations

Hiroshi Hasegawa^{*1}

¹Waseda University, Japan

IEEM25-A-0050/Joint Optimization of Condition Based Maintenance and Inventory Control for Redundant Systems Based on Improved Reinforcement Learning

Jun Wang^{*1}

¹Beijing Foreign Studies University, China

IEEM25-F-0019/Analyze the main criteria of Corporate Social Responsibility of SMEs through Fuzzy Logic

Gabriela Araujo^{*1}, Javier Cabrera²

¹Salesian Polytechnic University, Ecuador

²Catholic University of Cuenca, Ecuador

Engineering Education and Training 2

2025-12-08 04:00 PM-06:00 PM 107

Session Chair(s): Carman Ka Man LEE
The Hong Kong Polytechnic University
Senevi KIRIDENA
University of Wollongong

IEEM25-F-0261/From Classroom to Impact: Embedding Sustainable Hunger Relief Innovations in an Engineering Entrepreneurship Course

Steven Jiang^{*1}, Lauren Davis², Mikaya Hamilton²

¹North Carolina Agricultural and Technical State University, United States

²North Carolina A&T State University, United States

IEEM25-F-0353/International Students' Transition to Engineering Postgraduate Studies; Key Challenges, Underlying Factors and Possible Support Strategies

Senevi Kiridena^{*1}, David Hastie¹, Brad Stappenbelt¹, Abheek Basu¹

¹University of Wollongong, Australia

IEEM25-F-0437/Impact and Time Delays Caused by Geotechnical Treatment Works in Panborneo Highway Package of Sabah Malaysia

Ramanathan Chidambaram^{*1}

¹Pembinaan Azam Jaya Sdn Bhd, Malaysia

IEEM25-F-0480/Exploration of the Cultivation Path of Digital Intelligence Engineers with Chinese Characteristics — Based on the Research on Engineering Ethics in the Context of the Digital Intelligence Era

Junyi Yu^{*1}, Shuyan Gong¹

¹Northwestern Polytechnical University, China

IEEM25-F-0494/Immersive Metaverse for Critical Minerals Supply Chain Education: A Conceptual Framework Architecture

Oshadhi Kaushalye Herath Herath Mudiyanse^{*1}, Deepesh C. Jayasekara², Ryosuke Harakawa³, Masahiro Iwahashi³, Mukesh Kumar², Tadachika Nakayama^{*1}

¹Nagaoka University of Technology, Japan

²Department of Engineering, Institute for Manufacturing (IfM), University of Cambridge, United Kingdom

³Department of Electrical, Electronics and Information Engineering, Nagaoka University of Technology, Japan

IEEM25-F-0066/Locating Emergency Floods Shelters Using P-median Method

Wichitsawat Suksawat Na Ayudhya^{*1}

¹King Mongkut's Institute of Technology, Ladkrabang, Thailand

IEEM25-F-0413/A Role Model for Systems Engineering of AI Systems

Oliver Bleisinger^{*1}, Mareike Victoria Keil², Martin Eigner³

¹University of Kaiserslautern-Landau, Germany

²University of Mannheim, Germany

³EIGNER Engineering Consult, Germany

ORAL SESSIONS

Engineering Economy and Cost Analysis

2025-12-08 04:00 PM-06:00 PM 108

Session Chair(s): Haiying JIA
Norwegian School of Economics
Lutfiye MANLI
Powerlink Queensland

IEEM25-F-0085/Challenges for the German Manufacturing Industry – A Survey Among Manufacturing Companies

Julian Stang¹, Bjoern Klages¹, Yichen Guo¹, Jonathan Dommermuth¹, Christina Reuter¹

¹Technical University of Munich, Germany

IEEM25-F-0117/Bridging Finance and Engineering: Shareholder Response to Sustainability-linked Debt in Shipping

Haiying Jia¹, Mengjia Dai¹

¹Norwegian School of Economics, Norway

IEEM25-F-0308/Proposal of an Evaluation Framework for Small Investment Projects

Thomaz Fagá¹, Jorge Cunha¹

¹ALGORITMI Research Center - University of Minho, Portugal

IEEM25-A-0094/Strategic Life Cycle Decisions for Transmission Assets

Lutfiye Manli¹, Gopinath Chattopadhyay²

¹Powerlink Queensland, Australia

²Federation University, Australia

IEEM25-A-0144/A Real options-based Economic Decision Model for Staged Data Acquisition

SangWoo YUN¹, Deok-Joo Lee¹

¹Seoul National University, Korea, South

IEEM25-F-0301/Bibliometric Study on Knowledge Hiding and Innovation

Widya Ayu Amelia¹, Nurul Indarti¹, Sari Sitalaksmi¹

¹Universitas Gadjah Mada, Indonesia

IEEM25-F-0446/Sustainability of Pyrolysis Oil Production from Waste Plastics

Moses Jeremiah Barasa Kabeyi¹, Oludolapo Olanrewaju¹, Steven Wanjala¹

¹Durban University of Technology, South Africa

Healthcare Systems and Management 1

2025-12-08 04:00 PM-06:00 PM 111

Session Chair(s): Kae-Kuen HU
National Taiwan University
Ripon K. CHAKRABORTTY
UNSW Canberra

IEEM25-F-0291/Deployment Optimization of Mobile Automated External Defibrillators: Spatiotemporal Characterized Model and Adjusted ALNS Algorithm

Hanxiao Jiang¹, Kexin Cao¹, Mingchuan Yang², Wai Kin (Victor) Chan¹

¹Tsinghua University, China

²Shenzhen Technology Institute of Urban Public Safety, China

IEEM25-F-0337/The Multi Influential Path of Strategic CSR in Reshaping Veterinary Healthcare Business

Kae-Kuen Hu¹, Kuo-Liang Chen², Tzu- Chieh Weng³, Mo-An Chu⁴

¹National Taiwan University, Taiwan

²National Kaohsiung University of Science and Technology, Taiwan

³Professional Master's Program of Biotechnology Management, National Taiwan University, Taiwan

⁴National Taiwan University of Science and Technology, Taiwan

IEEM25-F-0338/Apply Patent Network Analysis to Gene and Cell Therapy Technology Development

Kae-Kuen Hu¹, Kuo-Liang Chen², Yu-Wen Liu¹, Mo-An Chu³

¹National Taiwan University, Taiwan

²National Kaohsiung University of Science and Technology, Taiwan

³National Taiwan University of Science and Technology, Taiwan

IEEM25-F-0252/Effects of Customization and Body Movement of Ai-driven Virtual Doctors on User Experience in Varied Healthcare Consultation Scenarios

Wenjie Zhang¹, Da Tao¹

¹Shenzhen University, China

IEEM25-F-0176/Level of Usage and Awareness of Disruptive Technologies in Fast Moving Consumer Goods In South Africa

Nita Sukdeo^{1,2}, Ifije Donald Ohiomah², Masedi Jackson Gwangwa¹

¹University of Johannesburg, South Africa

²University of the West of England, United Kingdom

IEEM25-F-0333/Designing Resilient Ai-powered Digital Assistants for Industrial Applications: A Mini Review of Key Challenges

Peter Onu¹, Anup Pradhan¹, Nelson Madonsela¹, Peter Onu², Samuel Oyefusi²

¹University of Johannesburg, South Africa

²Pan-Atlantic University, Nigeria

ORAL SESSIONS

Systems Modeling and Simulation 1

2025-12-08 04:00 PM-06:00 PM 112

Session Chair(s): **Sekar SAKTI**
 Universitas Gadjah Mada

IEEM25-F-0220/Research on the Resilience Evolution of Knowledge Networks Considering Key Node Failure

Junfan Zhai^{*1}, Naiding Yang^{*1}, Yuheng Huang², Yuehui Yao²

¹Northwestern Polytechnical University, China

²School of Management, Northwestern Polytechnical University, China

IEEM25-F-0228/Research on Propagation Models in Supply Chain Risk Propagation

Yuehui Yao^{*1}, Naiding Yang^{*2}, Junfan Zhai², Yuheng Huang¹

¹School of Management, Northwestern Polytechnical University, China

²Northwestern Polytechnical University, China

IEEM25-F-0324/Simulating Food Waste Household Prevention Behaviors in Yogyakarta Through Agent-based Modeling

Muthi Amalia¹, Anna Maria Sri Asih^{*1}, Sekar Sakti^{*1}

¹Universitas Gadjah Mada, Indonesia

IEEM25-F-0336/Towards a Simulation Model for Pneumatic Conveying of Cable-like Deformable Linear Objects

Simon Fröhlig^{*+1}, Patrick Bründl², Christopher Straub³, Jörg Franke²

¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

²Friedrich-Alexander-Universität Erlangen-Nürnberg, Institute for Factory Automation and Production Systems (FAPS), Germany

³Fraunhofer Institute for Integrated Systems and Device Technology IISB, Erlangen, Germany

IEEM25-F-0339/Improvement of Out-going Car Flow Rate Using Simulation Technique: Case Study of Chiang Mai University

Chanawee Meekarm¹, Phavika Mongkolkittaveepol¹, Tinnakorn Phongthiya^{*+1}

¹Chiang Mai University, Thailand

IEEM25-F-0427/Introducing Adaptive Q-learning In Agent-based Models: A Case Study of Butterfly Hilltopping

Maria Krisnawati^{*1}, Bertha Maya Sopha^{*1}, Yun Prihantina Mulyani¹

¹Universitas Gadjah Mada, Indonesia

IEEM25-F-0098/A Multi-criteria Decision Analysis and Metaheuristic Optimization Framework for the Spatial Allocation of Hybrid Renewable Energy Systems in Power Grids

Olubayo Babatunde^{*+1}, Oludolapo Olanrewaju¹

¹Durban University of Technology, South Africa

Supply Chain Management 4

2025-12-09 08:30 AM-10:30 AM 103

Session Chair(s): Zahra HOSSEINIFARD
The University of Melbourne
Shipra PANDEY
Prestige Institute of Global Management

IEEM25-A-0099/Protecting Supply Chains: Supply Chain Finance as A Tool for Risk Management

Xinyue Liu^{*1}, William Ho¹, Srinivas Talluri²

¹The University of Melbourne, Australia

²Michigan State University, United States

IEEM25-A-0124/Optimal Distributions in the Supply Chain with Long Lead Time Using a Stochastic Assignment Problem

Gitae Kim^{*1}, Taegu Kim¹, Sujeong Baek¹

¹Hanbat National University, Korea, South

IEEM25-A-0127/Last-mile Delivery Efficiency for Cargo Bikes: The Role of City Topography

Haemin Jung^{*1}, Byung Kwon Lee^{*1}

¹Korea National University of Transportation, Korea, South

IEEM25-A-0193/Substitution or Emergency Order? Managing Blood Inventory Under Uncertainty

Zahra HosseiniFard^{*1}

¹The University of Melbourne, Australia

IEEM25-F-0400/Enhancing Supply Chain Resilience Through the Assessment of Stakeholder Attribute Dynamics

Charuni Wijayasingha¹, H. Niles Perera^{*1}, Jayani Sudusinghe¹

¹University of Moratuwa, Sri Lanka

IEEM25-A-0110/Supply Chain Transformational Leadership and Green Intellectual Capital: The Mediating Role of Environmental Unlearning

Yuxia Liu^{*1}, Lifang Wang¹, Taiwen Feng², Yunhui Zhao³, Mengjie Xi², Shuochen Wei¹

¹School of Management, Northwestern Polytechnical University, China

²School of Economics and Management, Harbin Institute of Technology (Weihai), China

³School of Business Administration, Inner Mongolia University of Finance and Economics, China

IEEM25-F-0379/Evaluation of Human Resource Practices for Enhancing Supply Chain Agility: A BMW Approach

Shipra Pandey^{*1}, Ritesh Deore¹

¹Prestige Institute of Global Management, Indore, India

ORAL SESSIONS

Technology and Knowledge Management 4

2025-12-09 08:30 AM-10:30 AM 104

Session Chair(s): Fang-Mei TSENG
Yuan Ze University
Yan-Ling CAI
Zhengzhou University

IEEM25-F-0506/An Empirical Analysis of Factors Influencing Behavioral Intentions of GAI for Packaging Design Professionals Based on Technology Acceptance Models

Yan-Ling Cai¹, Junyi Wu¹, Zichun Niur¹, Xinyu Li¹

¹Zhengzhou University, China

IEEM25-F-0508/Reconceptualizing Knowledge Management: Heterogeneous Impacts of Generative and Recommender AI

Pei-Chen Chen¹, Ming-Chao Wang²

¹Department of Business Administration, Tainan University of Technology, Taiwan

²Yuan Ze University, Taiwan

IEEM25-F-0519/Comparative Analysis of Regulatory Focus in Autonomous Vehicles (AVs) and Maritime Autonomous Surface Ships (MASS)

Tae-Eun Kim¹, Jen-Uwe Schröder-Hinrichs²

¹University of Tromsø, Norway

²World Maritime University, Norway

IEEM25-A-0053/How Do Esg Practices Affect Green Innovation Performance?

Fang-Mei Tseng¹, Hsin-Yu Chuang²

¹Yuan Ze University, Taiwan

²Taiwan Research Institute, Taiwan

IEEM25-A-0095/Disruptive Transitions and Commercialization Failure in Socio-technical Systems: Lessons from Korean Urban Transportation Planning

Kiho Kwak¹, Hyungbae Gil²

¹Hanbat National University, Korea, South

²Korea Institute of Machinery & Materials, Korea, South

IEEM25-F-0431/The Role of Physicality: Definitive Causes for Challenges in Adopting Agile Practices in Hardware Development

Alexander Patrick Schlegel¹, Florian Joseph Guenther¹, Stefan Weiss¹, Alexander Koch¹

¹University of the Bundeswehr Munich, Germany

IEEM25-F-0444/Energy for Harvesting: Availability and Power Densities

Moses Jeremiah Barasa Kabeyi¹, Oludolapo Olanrewaju¹

¹Durban University of Technology, South Africa

IEEM25-F-0529/Water-energy-food and Health Nexus in Urban Environment: Challenges and Solutions

Joseph Akpan¹, Busola Dorcas Akintayo¹, Temitope Kehinde², Oludolapo Olanrewaju¹

¹Durban University of Technology, South Africa

²Hong Kong Polytechnic University, Hong Kong SAR

Operations Research 2

2025-12-09 08:30 AM-10:30 AM 105

Session Chair(s): Norbert TRAUTMANN
University of Bern
Carman Ka Man LEE
The Hong Kong Polytechnic University

IEEM25-F-0297/Polynomial-time Algorithms for the Fixed-route Vehicle Charging Problem with a Linear Charging Function

Aito Hirano^{*+1}, Kazuki Hasegawa², Wei Wu²

¹Graduate School of Integrated Science and Technology, Shizuoka University, Japan

²Shizuoka University, Japan

IEEM25-F-0202/A Global Optimization Strategy for Dynamic Rider-order Matching Problems Based on a Bilateral Queuing Framework

Chengyang Huo¹, sun yujie¹, Xi Tang¹, Canrong Zhang^{*1}

¹Tsinghua University, China

IEEM25-F-0246/Study on Reducing Cuts in the 2d Cutting Stock Problem

Daiki Nishiguchi^{*1}, Harumi Haraguchi^{*2}

¹Master's Program in Computer Science, Graduate School of Science and Engineering, Ibaraki University, Japan

²Ibaraki University, Japan

IEEM25-A-0046/An Enhancement of Mixed-Integer Linear Programming Models for Resource Allocation in Project Networks

Nicklas Klein¹, Norbert Trautmann^{*+1}

¹University of Bern, Switzerland

IEEM25-A-0059/Mixed-Use Single Track Rail Scheduling

Andreas Ernst^{*+1}, Robert Milligan¹, Yakov Zinder²

¹Monash University, Australia

²University of Technology Sydney, Australia

IEEM25-F-0319/Heuristic Approaches to the Multi-site Wafer Covering Problem

Dominic Deckert^{*+1}, Peter Holland-Moritz¹, Dirk Reichelt¹

¹Dresden University of Applied Sciences (HTWD), Germany

IEEM25-F-0097/A Review of Multi-criteria Decision-making Techniques for Spatial Optimization of Hybrid Renewable Energy Systems

Olubayo Babatunde^{*+1}, Oludolapo Olanrewaju¹

¹Durban University of Technology, South Africa

ORAL SESSIONS

E-Business and E-Commerce

2025-12-09 08:30 AM-10:30 AM 106

Session Chair(s): **Eko Heru PRASETYO**
 Institute of Science Tokyo
 Li-Ting HUANG
 Chang Gung University

IEEM25-F-0357/Group Buying or Individual Purchasing? The Effect of Bargaining Power and Competitive Intensity on Retailers' Purchasing Choice

Yan Guo¹, Hou-ping Tian^{*1}, Chang-xian Liu^{*2}

¹*Nanjing University of Science & Technology, China*

²*Nanjing University of Posts and Telecommunications, China*

IEEM25-F-0375/Encroachment or Not? The Effect of Reputation and Commission on Platform's Selling Format

Nan QIU¹, Jiaqi SHI¹, Chang-xian Liu², Hou-ping Tian^{*1}

¹*Nanjing University of Science & Technology, China*

²*Nanjing University of Posts and Telecommunications, China*

IEEM25-F-0497/Revisiting the Privacy Paradox: Contextual Dynamics and Privacy Calculus in Branded Mobile Apps Engagement

Li-Ting Huang^{*+1}

¹*Chang Gung University, Taiwan*

IEEM25-F-0270/Perceived Risks and Algorithmic Control: A Study of Ride-hailing Platform Workers in Indonesia

Eko Heru Prasetyo^{*+1}, Prawira Fajarindra Belgiawan²

¹*Institute of Science Tokyo, Japan*

²*Institut Teknologi Bandung, Indonesia*

IEEM25-A-0131/Dynamic Influencer-brand Matching: A Competition-aware Markov Decision Process Framework

Ruibin Geng^{*+1}

¹*Northwestern Polytechnical University, China*

IEEM25-A-0170/Dual-channel Product Assortment Strategies in Small-scale Retail

Lizabeth Ann Franco^{*+1}, Simon Anthony Lorenzo¹

¹*University of the Philippines Diliman, Philippines*

Human Factors 1

2025-12-09 08:30 AM-10:30 AM 107

Session Chair(s): Aries SUSANTY
Diponegoro University
Ziaul Haque MUNIM
University of South-Eastern Norway

IEEM25-F-0031/Effectiveness of Virtual Reality Safety Training on Bicyclists' Safety Awareness and Risk Prediction Ability: A Randomized Controlled Experiment

Kakeru Miyamoto¹, Xiuzhu Gu^{*1}

¹*Institute of Science Tokyo, Japan*

IEEM25-F-0036/Using Iso 25023 Model to Evaluate the Usability of the Halal Food Tracer Information System

Aries Susanty^{*1}, Nia Budi Puspitasari¹, Abila Ramadhani¹, Zainal Fanani Rosyada¹, Sumunar Jati²

¹*Diponegoro University, Indonesia*

²*Lembaga Pengkajian Pangan, Obat-obatan, dan Kosmetika Majelis Ulama Indonesia, Indonesia*

IEEM25-F-0192/Influence of Interpersonal Familiarity on Team Situation Awareness: A Study on Industrial Manufacturing Monitoring Task

Min Qian Yang¹, Dian Yu^{*1}, Pei-Luen Patrick Rau^{*1}

¹*Tsinghua University, China*

IEEM25-F-0251/Extending the Framework of the Power Dynamics in Augmented Reality and Mixed Reality Aided Collaborative Design – a Systematic Review from 2014-2023

Yue Xu^{*1}, Mingming Wang², Weiyue Gao², Henry Duh²

¹*The Hong Kong Polytechnic University, Hong Kong SAR*

²*School of Design, The Hong Kong Polytechnic University, Hong Kong SAR*

IEEM25-F-0177/Transitioning from Synthetic to Natural Antioxidants in the Feed Industry

Nita Sukdeo^{*1}, Nonhle Mhlongo¹, Devesh Mothilall^{*1}

¹*University of Johannesburg, South Africa*

IEEM25-F-0455/LLM-facilitated Persona-based Delphi Method for Multi-criteria Idea Evaluation

Riku Nagumo^{*1}, Hajime Sasaki², Kouya Kitagawa³, Hiroyuki Matsuyama³, Hiroshi Maruyama³

¹*Dentsu Digital, Japan*

²*The University of Tokyo, Japan*

³*Dentsu Group Inc., Japan*

IEEM25-A-0151/Assessing Situation Awareness in Mining Systems with Different Levels of Automation: A System Approach to Improve Safety and Productivity

Loreto Codoceo^{*1}, Maureen Hassall², Danellie Lynas²

¹*University of Queensland, Australia*

²*Sustainable Minerals Institute, University of Queensland, Australia*

IEEM25-F-0225/Systematic Literature Review with Bibliometric Analysis on Human Error Framework: Causes of Human Errors in Manufacturing SMMes

Brian Selowa^{*1}, Olasumbo Makinde², Khathutshelo Mushavhanamadi¹

¹*University of Johannesburg, South Africa*

²*Senior Lecturer, South Africa*

ORAL SESSIONS

Decision Analysis and Methods 2

2025-12-09 08:30 AM-10:30 AM 108

Session Chair(s): Anup PRADHAN
University of Johannesburg
Ripon K. CHAKRABORTTY
University of New South Wales

IEEM25-A-0108/Integrating Large Language Models with the Black-litterman Model for Enhanced Portfolio Allocation

Jiyoung Yoo¹, Jang Ho Kim^{*1}

¹*Korea University, Korea, South*

IEEM25-A-0248/Global Media Sentiment Index for Nuclear Power Development: A Large Language Model Approach

Wonbae Park^{*1}, Wooyong Jung¹

¹*KEPCO International Nuclear Graduate School, Korea, South*

IEEM25-F-0492/Research on a Joint Strategy of Advance Selling and Resalable Returns Based on Arrival Rate and Value Perception Function

Xiaowen Sun^{*1}

¹*Guangdong University of Education, China*

IEEM25-F-0285/Optimizing Member Satisfaction of Song and Position Matching in Dance Clubs

Sayaka Asano^{*1}, Takashi Hasuie¹

¹*Waseda University, Japan*

IEEM25-F-0467/Interpretable Predictive Maintenance for Military Aircraft: Shape and Lime-based Insights to Remaining Useful Life Predictions

Ella Schultz¹, Ripon K. Chakraborty^{*1}

¹*UNSW Canberra, Australia*

IEEM25-A-0063/Optimal Accelerated Life Testing Sampling Plan Design with Piecewise Linear Function Based Modeling of Lifetime Characteristics

Shovan Chowdhury^{*1}

¹*Indian Institute of Management, Kozhikode, India*

IEEM25-F-0017/Positioning Analysis in the Construction Market based on the Structural Equations Model (SEM)

Javier Cabrera^{*1}, Gabriela Araujo²

¹*Catholic University of Cuenca, Ecuador*

²*Salesian Polytechnic University, Ecuador*

IEEM25-F-0080/Evaluation of Automotive Maintenance Practice Firms in Selected Area in Lagos State

Akinlo Mogbojuri^{*1}, Oludolapo Olanrewaju¹

¹*Durban University of Technology, South Africa*

Intelligent Systems 2

2025-12-09 08:30 AM-10:30 AM 111

Session Chair(s): **Budi SANTOSA**
Institut Teknologi Sepuluh Nopember
Nur HAMID
King Fahd University of Petroleum and Minerals

IEEM25-F-0302/Solving Capacitated Vehicle Routing Problem with Multi-trips and Multi-products (CVRPMTMP) Using a Discrete Flower Pollination Algorithm (DFPA)

Budi Santosa^{*1}, Lavina Fika Saniya Darma¹

¹*Institut Teknologi Sepuluh Nopember, Indonesia*

IEEM25-F-0493/Cooperative Multi-robot Pick-and-place Systems Via Layout and Motion Optimization Using Evolutionary Algorithms

Md. Kaimujjaman^{*1}, Tatsushi Nishi²

¹*Okayama University, Japan*

²*Ritsumeikan University, Japan*

IEEM25-A-0196/Virus Optimization Algorithm (VOA) for Hyperparameter Optimization in Machine Learning Models: Case Study of Air Compressors in Textile Fiber Tech Company

Yun-Chia Liang^{*1}, Cheng-Hui Lai¹, Billy Ngaliman Tjia^{*1}

¹*Yuan Ze University, Taiwan*

IEEM25-A-0214/Model-based Optimization of Treatment Outcomes Using Ann and Nsga-ii in Industrial Wastewater Applications

Pei-Shan Wang^{*1}, Kung-Jeng Wang²

¹*National Taiwan University of Science and Technology, Taiwan*

²*Department of Industrial Management, National Taiwan University of Science and Technology, Taipei, ROC, Taiwan*

IEEM25-A-0054/From Lab to Fab: A Framework for Selecting an Object-Detection Model and Its Thresholds Considering Cost and Stability

Kuhyun Lee^{*1}, Jihoon Hong², Beom-Seok Kim³, Yuna Song³, Dong-Hee Lee^{*3}

¹*Sungkyunkwan University, Samsung Electronics, Korea, South*

²*Samsung Electronics, Korea, South*

³*Sungkyunkwan University, Korea, South*

IEEM25-F-0326/Adaptive Interception Strategies of Unmanned Surface Vehicle Defender for Coastal and Port Security

Nur Hamid^{*1}, Willy Dharmawan¹, Haitham H. Saleh¹, Sami El-Ferik¹

¹*King Fahd University of Petroleum and Minerals, Saudi Arabia*

IEEM25-A-0045/From Manual Counts to Autonomous Monitoring: Unlocking Operational Efficiency with Artificial Intelligence Technologies

Leonardo Leoni^{*1}, Saverio Ferraro¹, Leonardo Leoni¹, Tommaso Portaluri^{*2}

¹*University of Florence, Italy*

²*Verity AG, Switzerland*

IEEM25-F-0355/Enhancing Large-scale Consumer Prediction Models Using Generative Ai Dataset Expansion and Probabilistic Output Mechanisms

Satoru Yamamoto^{*1}

¹*Dentsu Digital Inc., Japan*

ORAL SESSIONS

Big Data and Analytics 3

2025-12-09 08:30 AM-10:30 AM 112

Session Chair(s): **Ran JIN**
 Virginia Tech

IEEM25-A-0114/End-to-end Supervised Contrastive Learning with Defect Augmentation for Industrial Image Anomaly Detection

Zhamilya Saparova^{*1}, Sudong Lee^{*1}

¹*University of Ulsan, Korea, South*

IEEM25-A-0147/Divergence Between Media Sentiment and Statistical Ratings in Football Player Evaluation

Tomoki Kubo^{*1}, Takashi Hasuike¹

¹*Waseda University, Japan*

IEEM25-F-0503/Data-Driven Performance Profiling in Indian Football: A Clustering-Based Approach

Praveen D Chougale^{*1}, Usha Ananthakumar¹

¹*Indian Institute of Technology Bombay, India*

IEEM25-A-0121/Analysis of Competitive Relationships of Emerging Technologies Based on the Lotka-Volterra Model: Through Time Series Forecasting Using LLM

Bokyung Lee^{*1}, Byungun Yoon^{*1}

¹*Dongguk University, Korea, South*

IEEM25-F-0193/Random Forest Analysis of the Voting Factors for the Golden Glove Award in Japanese Professional Baseball

Taisei Miyaki^{*1}, Takashi Hasuike¹

¹*Waseda University, Japan*

IEEM25-F-0268/A Stacking Ensemble Framework Incorporating Weather Information for Enhanced Traffic Flow Prediction at Highway Entrances

Xiang Yin^{*1}, Qingsong Xu², Zhipeng Zhang^{*1}, Lei Dai¹, Feng Xu¹, Hao Hu¹

¹*Shanghai Jiao Tong University, China*

²*COSCO SHIPPING TECHNOLOGY Co. Ltd, China*

IEEM25-A-0024/Exploring the Impact of Digitalization on Entrepreneurship Using Machine Learning: A Global Perspective

Ahmed Shiyaan Ibrahim¹, Rahkesh A/L Kumar¹, Mubbasher Munir^{*2}, Noman Arshed¹, Narishah Mohamed Salleh¹

¹*Department of Business Analytics, Sunway Business School, Sunway University, Malaysia, Malaysia*

²*Sunway Business School, Sunway University, Malaysia*

IEEM25-F-0272/Requirements Elicitation for a Methodology to Systematically Identify, Evaluate, and Select Suitable AI-based Solutions in Manufacturing Companies

Caroline Colsmann^{*1}, Julian Stang², Patrick Jordan^{*1}, Christina Reuter²

¹*Institute for Machine Tools and Industrial Management, School of Engineering and Design, Technical University of Munich, Germany*

²*Technical University of Munich, Germany*

Supply Chain Management 5

2025-12-09 11:00 AM-12:30 PM 103

Session Chair(s): **Pham QUANG HUY**
University of Economics Ho Chi Minh City [UEH]

IEEM25-F-0298/Multi-Objective Optimization of Dynamic Recyclable Waste Vehicle Scheduling with Limited Number of Vehicles

Liu Liu¹, Yuxin Wang¹, Chang Liu¹, Meimei Zheng^{*1}, Wei Weng²

¹*Shanghai Jiao Tong University, China*

²*Kanazawa University, Japan*

IEEM25-F-0414/Untangling the Links: Supply Chain Bottlenecks and Export Challenges in Indonesia's Pulp and Paper Industry

Melisa Phebeyola E. Tarigan Silangit^{*1}, Togar Mangihut Simatupang¹, Liane Okdinawati¹

¹*Bandung Institute of Technology, Indonesia*

IEEM25-A-0171/Electric Vehicle Scheduling for Pickup and Delivery Under Time-dependent Port Congestion

Sang Woo Song^{*1}, Yoonjea Jeong^{*1}, GWANG KIM²

¹*Pukyong National University, Korea, South*

²*Chosun University, Korea, South*

IEEM25-F-0022/Enabling new inland waterway transportation services by means of digital integration

Cyril Alias^{*1}, Jonas zum Felde^{*1}

¹*Development Center for Ship Technology and Transport Systems, Germany*

IEEM25-A-0154/Coordinated Carbon-efficient Supply Chain Scheduling for Sustainable Industrial Operations

Sayem Ahmed^{*1}, Ripon K. Chakraborty¹, Alireza Abbasi¹

¹*University of New South Wales, Australia*

IEEM25-A-0157/Time-series Foundation Models for Automotive Demand Prediction: A Comparative Study

Sunghun Woo^{*1}, Younju Kim¹, Dongwook Yang¹

¹*Hyundai Mobis, Korea, South*

ORAL SESSIONS

Technology and Knowledge Management 5

2025-12-09 11:00 AM-12:30 PM 104

Session Chair(s): Martin HO
University of Cambridge
Aries SUSANTY
Diponegoro University

IEEM25-A-0101/Making All Roadmaps Digital-native: Metrics, Standards, and a Machine-readable EmTech Roadmap Database

Martin Ho^{*1}, Henry C W Price², Yulisyah Putri Daulay¹, Man Hang Yip¹, Eoin O'Sullivan¹, Rob Phaal¹

¹University of Cambridge, United Kingdom

²Imperial College London, United Kingdom

IEEM25-A-0107/Technology-based Equipment Ontology: Toward a Generalized Framework for Knowledge Representation

Juyoung Chong^{*1}, Sungjoo Lee^{*1}

¹Seoul National University, Korea, South

IEEM25-A-0091/Understanding the Relation Between Innovation and Quality

Ana Oliveira¹, Fernando Romero^{*1}

¹University of Minho, Portugal

IEEM25-A-0197/AI User Segmentation Based on Ethical Perception: A Factor and Cluster Analysis Approach

Ga Eun Kim^{*1}, Hyewon Hwang², Jeonghwan Jeon^{*2}

¹Management of Technology, Korea, South

²Gyeongsang National University, Korea, South

IEEM25-F-0334/The Progression of Technological Maturity and Changes in Inter-firm Collaboration: Co-invention Network Analysis in the Japanese Television Industry

Tomomi Hamada^{*1}

¹Chukyo University, Japan

IEEM25-A-0227/Creative Problem Solving with Gen AI

Sevval Bayram^{*1}, Kah-Hin Chai¹

¹National University of Singapore, Singapore

Operations Research 3

2025-12-09 11:00 AM-12:30 PM 105

Session Chair(s): Mingyao QI
Tsinghua University
Sang Jin KWEON
Yonsei University

IEEM25-A-0142/Joint Optimization for 3D Printing-driven Products Reconfiguration with Supply Chain Consideration

Shuang Ma^{*1}, Linda Zhang^{*2}, Xiaotian Cai³

¹University of Science and Technology Beijing, China

²IESEG School of Management, France

³Chinese Academy of Science and Technology for Development, China

IEEM25-A-0143/A Heuristic approach for the Multi-visit Mothership and Drone Routing Problem

Yun Liu^{*1}, Jun Xia^{*1}

¹Shanghai Jiao Tong University, China

IEEM25-A-0153/Location and Routing Optimization for Emergency Water Distribution Under Mobility Constraints

Jooho Kim¹, Sang Jin Kweon^{*+2}

¹Texas A&M University, United States

²Yonsei University, Korea, South

IEEM25-A-0158/Proposal of a Meta-strategy for Vehicle Routing Problem with Drone

Kakeru Arikawa^{*+1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-A-0161/Optimal Placement of Hydrogen Stations Using Evolutionary Computation

RYOICHI TOKUDA^{*+1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-A-0168/License Reassignment Under Market Uncertainty: A Dynamic Mechanism Design Approach

Heeyeon Lee¹, Jihyeok Jung², Deok-Joo Lee^{*1}

¹Seoul National University, Korea, South

²Incheon National University, Korea, South

ORAL SESSIONS

Manufacturing Systems 3

2025-12-09 11:00 AM-12:30 PM 106

Session Chair(s): Harumi HARAGUCHI
Ibaraki University
Shiva ABDOLI
University of New South Wales

IEEM25-F-0312/A Novel Connector-and-Gripper Design for Precision Robotic Peg-in-Hole Operations in Automated Wire Harness Applications

Simon Lamprecht^{*†1}, Annalena Hartmann¹, Dev Makwana¹, Patrick Bründl¹, Jörg Franke¹

¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany

IEEM25-F-0408/Product Innovation Design a Case Study of a New Approach from Recycled Materials for Building Walls

Anin Memon^{*†1}, Chana Leebamroong¹, Walanrak Poomchalit², Ponlapath Tipboonsri¹

¹Rajamangala University of Technology Thanyaburi, Thailand

²Major in Architectural Technology, Faculty of Architecture, Rajamangala University of Technology Thanyaburi, Thailand

IEEM25-F-0420/Simulation-Based Evaluation of Matrix Production for Remanufacturing

Paul Molenda^{*†1}, Jan Koller², Vihasith Ganga³

¹Hof University, Germany

²Fraunhofer, Germany

³Engineering Department, Germany

IEEM25-F-0460/Investment Portfolio Strategies for Offshore Semiconductor Manufacturing under Geopolitical Risk and Technology Adoption Dynamic

Quynh Hoa Truong^{*†1}, Hong-Phuc Nguyen², Kim Tien Truong¹, Kung-Jeng Wang¹

¹Department of Industrial Management, National Taiwan University of Science and Technology, Taipei, Taiwan, ROC, Taiwan

²Faculty of Industrial Management, College of Engineering, Can Tho University, Can Tho, Vietnam, Viet Nam

IEEM25-F-0119/Applications of Industry 4.0 Technologies in Labor-intensive Manufacturing

Wei Shen¹, Shiva Abdoli^{*†1}

¹University of New South Wales, Australia

IEEM25-A-0282/Reinforcement Learning-based Mitigation of OHT Congestion in Semiconductor Fabs

Bonwoo Koo¹, Yonggab Kim², Jaekoung Choi^{*†1}, Sungbum Jun³, Youngchul Shin^{*†1}

¹Ajou University, Korea, South

²Walmart Global Tech, United States

³Dongguk University, Korea, South

Human Factors 2

2025-12-09 11:00 AM-12:30 PM 107

Session Chair(s): Myung Hwan YUN
Seoul National University
Ziaul Haque MUNIM
University of South-Eastern Norway

IEEM25-F-0495/Factors Influencing Cybersecurity Risk and Autonomous Shipping Awareness

Doina Huso¹, Ziaul Haque Munim^{*2}, Yuan Chai³, Tae-Eun Kim⁴, Zakirul Bhuiyan⁵

¹University of Agder/RMIT University, Norway

²University of South-Eastern Norway, Norway

³The University of Adelaide, Australia

⁴University of Tromsø, Norway

⁵Warsash Maritime School, Solent University, United Kingdom

IEEM25-A-0134/Designing for Symbiosis: Intelligitizing HFE for Human-AI Collaboration

Jane Lee¹, Sungjoo Lee¹, Yoosuk Hong¹, Myung Hwan Yun^{*2}

¹Seoul National University, Korea, South

²Department of Industrial Engineering, Seoul National University, Korea, South

IEEM25-A-0258/Human Factors in Seafarer Competency Training: What Is Overlooked?

Ziaul Haque Munim^{*1}, Fang Zheng¹, Anne Bouyssou Chen², Tae-Eun Kim³

¹University of South-Eastern Norway, Norway

²Novia University of Applied Sciences, Finland

³University of Tromsø, Norway

IEEM25-F-0100/Impact Factors of Emissions Reduction and Approaches Towards Aviation Decarbonization.

NISHIMWE ADELINE^{*1}, Jing Shao^{*1}

¹Northwestern Polytechnical University, China

IEEM25-F-0303/Robust Unsupervised Speaker-profile Analytics with Large Language Model-embedding-based Text Mining and Outlier Detection for Seed-stage High-tech Startup Recruiting

Yushi Nakaya^{*1}, Shuichi Ishida¹

¹Tohoku University, Japan

IEEM25-F-0101/A Systematic Literature Review of Last-mile Delivery: Analyzing Current Situations and Identifying Research Gaps for Future Perspectives

Piyanee Akkawuttiwanich^{*1}, Waralee Rattanakijsumton², Sai Pim Khay Noom³, Phuwit Sanganate³

¹International Academy of Aviation Industry, Thailand

²King Mongkut's Institute of Technology Ladkrabang, Thailand

³International Academy of Aviation Industry, King Mongkut's Institute of Technology Ladkrabang, Thailand

ORAL SESSIONS

Safety, Security and Risk Management

2025-12-09 11:00 AM-12:30 PM 108

Session Chair(s): Byung Kwon LEE
Korea National University of Transportation
Haiying JIA
Norwegian School of Economics

IEEM25-F-0125/Improving the Robustness of Generalized Extreme Value Distribution Estimation Using γ -Divergence

Anri Iwasaki^{*1}, Hiroki Iwamoto¹, Yasushi Nagata¹

¹Waseda University, Japan

IEEM25-F-0269/Causal Inference of Construction Environmental Factors on Worker Health: Stress Probability Modeling via Gaussian Process Networks

Seunghyun Lee^{*1}, Gitaek Lee², Seokho Chi^{*1}

¹Department of Civil and Environmental Engineering, Seoul National University, Korea, South

²Institute of Construction and Environmental Engineering (ICEE), Korea, South

IEEM25-A-0128/Data-driven Port Safety: from Incident Reports to Predictive Simulation

Sang Duck Lee¹, Joyce Low², Byung Kwon Lee^{*+3}

¹Korea Railroad Research Institute, Korea, South

²Singapore Management University, Singapore

³Korea National University of Transportation, Korea, South

IEEM25-F-0477/Analysis of Risks for Adoption of Electric Vehicles in India

Ravi Kant^{*+1}, Shashi Kant Tripathi¹

¹Sardar Vallabhbhai National Institute of Technology, India

IEEM25-F-0121/Safety Hazard Identification and Captioning in Metallurgical Equipment Maintenance Using BLIP2 Vision-Language Model

Yongshuang Li^{*1}, Feng Xu^{*1}, Zhipeng Zhang¹, Xinyu Mei¹

¹Shanghai Jiao Tong University, China

IEEM25-F-0499/Mathematical Modeling for the Consolidation of Elementary Schools in Depopulated Areas

Takenari Kanawa^{*+1}, Wei Wu², Yannan Hu¹

¹Tokyo University of Science, Japan

²Shizuoka University, Japan

Intelligent Systems 3

2025-12-09 11:00 AM-12:30 PM 111

Session Chair(s): Anup PRADHAN
University of Johannesburg
Budi SANTOSA
Institut Teknologi Sepuluh Nopember

IEEM25-F-0412/Lightweight Deep Reinforcement Learning Via Evolutionary Network Pruning for Drone Waypoint Following

K.T. Chung^{*1}, Carman Ka Man Lee¹, Y.P. Tsang¹

¹The Hong Kong Polytechnic University, Hong Kong SAR

IEEM25-A-0117/Scenario-Generation Based on Technology Evolution Pathways Using RAG and SAO-Based LDA

Minyoung Park^{*1}, Byungun Yoon¹

¹Dongguk University, Korea, South

IEEM25-A-0119/An Integrated Framework for Technology–Business Opportunity Discovery Using Trademark–Patent Embeddings and Anomaly Detection

Daye Lee^{*1}, Byungun Yoon^{*1}

¹Dongguk University, Korea, South

IEEM25-A-0122/Technology Innovation Investment Strategies Across the Life Cycle of SMEs: an Analysis Based on the Red Queen Effect

Donghyun Goo^{*1}, Byungun Yoon^{*1}

¹Dongguk University, Korea, South

IEEM25-F-0368/Implementation and Optimisation of Variational Autoencoder Approach for Predictive Maintenance in Robotic Flexible Assembly Cell: A Case Study

Ziyue Jin^{*1}, Romeo Marian¹, Javaan Chahl²

¹University of South Australia, Australia

²University of South Australia, Defence Science and Technology Organisation, Australia

IEEM25-F-0363/Wire Arc Additive Manufacturing of stainless steel using Cold Metal Transfer (CMT) with robot welding for productivity enhancement

Eduardo G P Bock^{*1}, Tatiana A Francisco², Ronaldo Romão², Wesley R. Nascimento², Marcio N. Zurlo²

¹Instituto Federal de Sao Paulo IFSP, Brazil

²Department of Mechanics, Instituto Federal de Sao Paulo, Sao Paulo, Brazil

ORAL SESSIONS

Systems Modeling and Simulation 2

2025-12-09 11:00 AM-12:30 PM 112

Session Chair(s): Yuan CHAI
The University of Adelaide
AHMAD SHAH HIZAM MD YASIR
Rabdan Academy

IEEM25-F-0381/Hybrid Deep Reinforcement Learning-based Product Scheduling Optimization and Machine Repair Prioritization

Jungyeon Kim¹, Jongsuk Lee¹, Jaehyun Lee², Byung-hun Song², Seung Ki Moon¹

¹Nanyang Technological University, Singapore

²Korea Electronics Technology Institute, Korea, South

IEEM25-A-0140/Measures to Mitigate Congestion Considering Profitability Using Multi-agent Simulation: a Case Study of Nishiki Market in Kyoto, Japan

Masahiro Hayaishi^{1*}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-F-0189/Applying System Archetypes to Analyze Port Congestion

Yuan Chai^{1*}, Ziaul Haque Munim², Indra Gunawan¹

¹The University of Adelaide, Australia

²University of South-Eastern Norway, Norway

IEEM25-F-0311/Sustainable Ecotourism Development Through Modeling System Approach: Analyzing Stakeholder Engagement, Environmental Knowledge, and Implementation Readiness

Augustina Asih Rumanti¹, IBNU ZULKARNA'IN², Fadel Muhammad³

¹Telkom University, Indonesia

²National Taiwan University of Science and Technology, Taiwan

³University of Melbourne, Australia

IEEM25-F-0461/From Availability to Profitability: Aligning Maintenance and Production Decisions Through Complex Repairable Flow Network Simulation

Nicholas Kaliszewski^{1*}, Romeo Marian¹, Javean Chahl²

¹University of South Australia, Australia

²University of South Australia, Defence Science and Technology Organisation, Australia

IEEM25-F-0091/The Influence of Systems Engineering Modelling and Simulation on Defense Acquisition: A Review of Risk Assessment and Cost Estimation

AHMAD SHAH HIZAM MD YASIR^{1*}

¹Rabdan Academy, United Arab Emirates

Supply Chain Management 6

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Session Chair(s): Zahra HOSSEINIFARD
The University of Melbourne
Hongrui LIU
San Jose State University

IEEM25-F-0209/Spare Parts Inventory Control Considering Holding-time-dependent Obsolescence Cost and Reactive Transshipment for a Multi-location Manufacturer

Chang Liu¹, Feiran Cai¹, Meimei Zheng^{*+1}, Tangbin Xia¹

¹Shanghai Jiao Tong University, China

IEEM25-F-0230/Vehicle Routing Problem with Time Constraints for Local Delivery

Li Cao^{*1}, Hongrui Liu^{*1}, Weizhi Li¹

¹San Jose State University, United States

IEEM25-F-0367/Integration or Outsourcing? Optimal Choice of Logistics Service for Competing E-tailers

Jiaqi SHI¹, Nan QIU¹, Chang-xian Liu², Hou-ping Tian^{*+1}

¹Nanjing University of Science & Technology, China

²Nanjing University of Posts and Telecommunications, China

IEEM25-F-0021/Examining extension options of an intermodal bulk cargo transport service on the Danube corridor

Jonas zum Felde^{*1}, Cyril Alias^{*1}, Herfried Leitner²

¹Development Center for Ship Technology and Transport Systems, Germany

²TTS (Transport Trade Services) GmbH, Austria

IEEM25-F-0316/Optimal Planning of a Green Hydrogen Production System in Qatar: a Mixed-integer Linear Programming Approach

Dana Alghool^{*+1}, Mohamed Haouari¹, Paolo Trucco²

¹Qatar University, Qatar

²Politecnico di Milano, Italy

IEEM25-A-0146/Multi-type Facility Location for Urban Drone Logistics with Pickup-and-delivery Demand

Songtao Wang¹, Mingyao Qi^{*+1}

¹Tsinghua University, China

IEEM25-F-0471/Robust Optimization Model for Multi-echelon Supply Chain Network Under Demand and Supply Uncertainty

Mst. Sumaya Akter^{*+1}, Tatsushi Nishi²

¹Okayama University, Japan

²Ritsumeikan University, Japan

IEEM25-F-0168/An Overview of AI and Data Science in South Africa

Timilehin Olaokun¹, Judith Nkuna¹, Anup Pradhan^{*+1}

¹University of Johannesburg, South Africa

ORAL SESSIONS

Technology and Knowledge Management 6

2025-12-09 02:00 PM-03:30 PM 104

Session Chair(s): Martin HO
University of Cambridge
Yu-Hsiang HSIAO
National Taipei University

IEEM25-F-0300/A Data-driven Evaluation of Early-Stage Startups based on the Integrative Framework of the Balanced Scorecard and RFM Analysis

Jinsu Lee¹, Youngjung Geum¹

¹*Seoul National University, Korea, South*

IEEM25-A-0109/Integrating Impact and Novelty for a Composite Measure of Research Excellence: A Unified Structural, Content, and Contextual Framework

Taeun Kim¹, Sungjoo Lee¹, Seoyoung Moon¹

¹*Seoul National University, Korea, South*

IEEM25-A-0092/A Patent Analytics-based Framework for Early EV Charging Technology Opportunity Detection

Yu-Hsiang Hsiao¹, Teng-Yu Chen¹

¹*National Taipei University, Taiwan*

IEEM25-F-0482/Do Vibrant Inventors Drive Vibrant Periods of Corporate R&D?

Chun-Chieh Wang¹, Dar-Zen Chen¹, You-Fu Lee¹, Mu-Hsuan Huang¹, Szu-Chia Lo¹

¹*National Taiwan University, Taiwan*

IEEM25-F-0294/Software-Defined Product Architecture: Status, Challenges, and Future Perspectives

Jongsuk Lee¹, Jungyeon Kim¹, Seong Je Park¹, Jaehyun Lee², Byung-hun Song², Seung Ki Moon¹

¹*Nanyang Technological University, Singapore*

²*Korea Electronics Technology Institute, Korea, South*

IEEM25-F-0154/Consumers' Attitudes Towards Circular Fashion: Survey-based Analysis on Second-hand Shopping, Renting and Repairing

Carmen Romero Espel¹, Stanislav Chankov¹

¹*Constructor University, Germany*

IEEM25-F-0137/On the Use of Indigenous Games in Teaching Software Engineering and Artificial Intelligence

Aaron Hunter¹

¹*BC Institute of Technology, Canada*

IEEM25-F-0260/An Evaluation of Strategic Digital Transformation Models in Supply Chain Management

Nirmani Dasanayake¹, Robert Wu¹, Samira Alvandi², Eva Cheng¹

¹*University of Technology Sydney, Australia*

Operations Research 4

2025-12-09 02:00 PM-03:30 PM 105

Session Chair(s): Norbert TRAUTMANN
University of Bern
Linda ZHANG
IÉSEG School of Management

IEEM25-F-0190/Quality Management and Industry 4.0 Capabilities for Industrial Decarbonisation Maturity Models: Evidences from Australian Manufacturing Companies

Filipe Mattos Batista de Moraes^{*†1}, Joseph Sebastian¹, Quan Minh Pham¹, Guilherme Luz Tortorella², Andrea Trianni¹

¹University of Technology Sydney, Australia

²University of Melbourne, Australia

IEEM25-F-0195/A Stability- and Orientation-constrained Algorithm for the Three-dimensional Container Loading Problem

Miharu Namiki^{*†1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-F-0264/Solution Approaches and Comparative Analysis for Multi-product Vehicle Routing Problems with Capacity Constraints Under Demand Uncertainty

Yumu Yasui^{*†1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-F-0436/The Electric Vehicle Routing Problem with Wireless Charging Lanes

Jakob Bosch^{*†1}, Hanan Raza², Mingyao Qi^{*†1}

¹Tsinghua University, China

²Shenzhen Hongmengtai Technology Co., Ltd, China

IEEM25-F-0394/Modelling Air Quality Category in Regional Victoria as a Discrete-time Markov Chain

Simon Anthony Lorenzo^{*†1}, Lizabeth Ann Franco¹

¹University of the Philippines Diliman, Philippines

IEEM25-A-0201/A Deep Q-Network Based Hyperheuristic for Dynamic and Stochastic Resource-Constrained Multi-Project Scheduling Problem

Qiqi Li^{*†1}, Yang Wang¹, Zhi Chen^{*†1}, Abraham Punnen²

¹Northwestern Polytechnical University, China

²Simon Fraser University, Canada

IEEM25-A-0244/A Parametric Polynomial Time Algorithm for the Stochastic Shortest Path Problem

Naoichi Ai^{*†1}, Takashi Hasuike¹

¹Waseda University, Japan

ORAL SESSIONS

Manufacturing Systems 4

2025-12-09 02:00 PM-03:30 PM 106

Session Chair(s): Xin LI
The Education University of Hong Kong
Kevin OTTO
The University of Melbourne

IEEM25-F-0086/Development of Oyster Shell and PET Bottle Waste for Sustainable Concrete Production

Fanny Tang^{*1}, Shu Lun Mak^{*2}, Ka Man Ma¹, Tsz Him Chan¹

¹Hong Kong Metropolitan University, Hong Kong SAR

²Vocational Training Council - Youth College (Kwai Chung), Hong Kong SAR

IEEM25-F-0307/Essential Sensors and Fault Detection Algorithms for Manufacturing Processes

Ben Ko^{*1}, Kevin Otto^{*1}, Bagus Nugroho¹

¹The University of Melbourne, Australia

IEEM25-F-0418/Integration Framework for Contamination Control and Automation: A Multidomain DSM for Mini-Environments in Battery Manufacturing

Marius Heller^{*+1}, Hung-Yueh Liao¹, Saskia Wessel¹

¹Fraunhofer FFB, Germany

IEEM25-F-0534/A Mixed Integer Linear Programming Model for Robotic Flow Shop Scheduling with Multi-type Parts Production

Xin Li^{*+1}

¹The Education University of Hong Kong, Hong Kong SAR

IEEM25-A-0120/Developing Corporate Digital Transformation Target Levels and Strategic Directions: Towards a Digital Collaborative Supply Chain

Yoon Seo^{*1}, Byungun Yoon^{*1}, Minyoung Park¹, Bokyung Lee¹, Keeun Lee¹

¹Dongguk University, Korea, South

IEEM25-F-0369/A Hybrid Modelling and Co-simulation Approach Based Lab-scale Digital Twin for Flexible Robotic Assembly Cell in Academia

Ziyue Jin^{*+1}, Romeo Marian¹, Javah Chahl²

¹University of South Australia, Australia

²University of South Australia, Defence Science and Technology Organisation, Australia

IEEM25-A-0116/Devising Data Collection Method and Problem Detection Method in Manufacturing Processes.

Masashi Okuda^{*+1}, Takumi Nakano¹, Toshiyuki Matsumoto¹

¹Aoyama Gakuin University, Japan

IEEM25-A-0062/Modeling for Simulation of a Heated Press in Panel Manufacturing

Erika Oliveira-Silva¹, César de Prada⁺², Albeto Vicente³, Carlos Gomez³, Fernando Tadeo⁴

¹ISP - Universidad de Valladolid, Spain

²University of Valladolid, Spain

³Sonae Arauco SL, Spain

⁴Univ. of Valladolid, Spain

Service Innovation and Management 2

2025-12-09 02:00 PM-03:30 PM 107

Session Chair(s): Augustina Asih RUMANTI
Telkom University
Sanetake NAGAYOSHI
Shizuoka University

IEEM25-F-0293/Factors Affecting Cross-functional Collaboration in New Business Development in Japanese Enterprises

Chiaki Ozawa^{*1}, Tomoyuki Kawamura², Haruyasu Noguchi², Tetsuya Toma²

¹System Design Management Research Institute, Keio University, Japan

²Keio University, Japan

IEEM25-F-0389/Ownership Vs Sharing Economy Models in Mobile-integrated Services: Cost-based Optimization from the Provider's Perspective

Ahmed Benhamimid^{*1}, Majed Hadid^{*1}, Elomri Adel², Nezir Aydin¹, Abdelfatteh El Omri¹

¹Division of Engineering Management and Decision Sciences, College of Science and Engineering, Hamad Bin Khalifa University, Qatar Foundation, Qatar

²Hamad Bin Khalifa University, Qatar

IEEM25-F-0452/Demand Prediction for Internet-based Outpatient Services Incorporating Temporal and Environmental Features

GUOWEI HU^{*1}, Yihui Wang², Liping Zhou^{*1}

¹Shanghai Jiao Tong University, China

²Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, China

IEEM25-A-0271/Research on Influencing Factors and Countermeasures for the Growth of Young Science and Technology Workers -----taking Young Science and Technology Workers in Shaanxi Province as an Example

Shuyan Gong^{*+1}, Lina Yang¹, Xiaojun Xing¹

¹Northwestern Polytechnical University, China

IEEM25-F-0240/Understanding Trip Chaining Behaviour in Bike Sharing Through Machine Learning and Poi Proximity Analysis

Angela Hsiang-Ling Chen¹, Elvina Hartawidjaja^{*1}, Yun-Chia Liang²

¹Chung Yuan Christian University, Taiwan

²Yuan Ze University, Taiwan

IEEM25-F-0409/Smart Lighting and Iot Integration: Pioneering Solutions for Traffic Congestion Management – Case Study

Siu Kei Lam^{*1}, Y.K. Chan², Chi Chung Lee¹, Fanny Tang¹, Kin Wai Tsang¹, Ying Wang¹, Shu Lun Mak^{*3}, Zhaobin Li²

¹Hong Kong Metropolitan University, Hong Kong SAR

²Simplestar Engineering Limited, Hong Kong SAR

³Vocational Training Council - Youth College (Kwai Chung), Hong Kong SAR

IEEM25-F-0033/Organizational Memory Enhanced by Computer Usage in Organizational Learning from Failure Practice: a Reproducibility Study Using Latest Data

Sanetake Nagayoshi^{*+1}, Jun Nakamura²

¹Shizuoka University, Japan

²Chuo University, Japan

ORAL SESSIONS

IEEM25-F-0042/The Role of Team Learning Behaviors in Fostering Innovative Behavior: Evidence from a Multinational Firm in Thailand

Pittawat Ueasangkomsate^{✉1}, Ruttanun Chamnanroeng¹

¹*Kasetsart University, Thailand*

Quality Control and Management 2

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Session Chair(s): **Pham QUANG HUY**
University of Economics Ho Chi Minh City [UEH]
Koichi MURATA
Nihon University

IEEM25-F-0145/Investigate the Tertiary Academic Outcomes by Technological Quality Control in Knowledge Management System

Luong Duc Thuan¹, Truong Thi Thu Huong¹, Pham Quang Huy¹
¹University of Economics Ho Chi Minh City [UEH], Viet Nam

IEEM25-F-0425/Enhancing Commercial Laboratory Efficiency and Knowledge Management: Leveraging Local Lms with Retrieval-augmented Generation

Shui Lun Au¹, Shu Lun Mak², Fanny Tang³
¹Hong Kong College of Technology, Hong Kong SAR
²Vocational Training Council - Youth College (Kwai Chung), Hong Kong SAR
³Hong Kong Metropolitan University, Hong Kong SAR

IEEM25-F-0144/The Role of Technological Application on Economic Information Processing Control in Achieving Learning Management System Success

Luong Duc Thuan¹, Tran Tien Khai¹, Pham Quang Huy¹
¹University of Economics Ho Chi Minh City [UEH], Viet Nam

IEEM25-F-0115/Unmanned Aerial Vehicle-assisted Inspection for Transportation Infrastructure Operation and Maintenance: A Review

Xinyu Mei¹, Feng Xu¹, Zhipeng Zhang¹, Yongshuang Li¹
¹Shanghai Jiao Tong University, China

IEEM25-F-0364/Critical Review on How a Small Household Electrical Appliance Manufacturer in China Can Maintain Their Competiveness Under Multiple Challenge Environment

Eric Cheung¹
¹Hong Kong Metropolitan University, Hong Kong SAR

IEEM25-F-0001/Relating Taguchi Methods (TM) and Internet of Things (IoT) in Additive Manufacturing (AM) To Strategy of the Firm: Few Propositions

Vimal Kumar¹, R.R.K. Sharma², Niraj Kumar Vishwakarna³, Avirag Bajpai⁴
¹Chaoyang University of Technology, Taiwan
²Indian Institute of Technology Kanpur, India
³IIT Lucknow, India
⁴L&T IPM Vadodara, India

IEEM25-F-0442/A Digital Twin Approach to Adaptive Control Melt-penetration for Large-scale Structural Components Through Two-stage Metal Additive Manufacturing

HUANGYI QU¹, Mingjun Chen¹, Yi Wang², YI CAI¹
¹The Hong Kong University of Science and Technology, China
²University of Missouri, United States

IEEM25-F-0130/Mimicking Emulsification Principle to Learning Process for Worksite People: Biomimicry Perspective

Koichi Murata¹
¹Nihon University, Japan

ORAL SESSIONS

Healthcare Systems and Management 2

2025-12-09 02:00 PM-03:30 PM 111

Session Chair(s): Kae-Kuen HU
National Taiwan University
Ripon K. CHAKRABORTTY
UNSW Canberra

IEEM25-F-0432/An Enhanced Adaptive Large Neighborhood Search Algorithm for Skill-based and Periodic Home Healthcare Scheduling

Qu Wei¹, Yuze Yang¹, Benjie Li², Kang Li¹

¹Sichuan University, China

²Waseda University, Japan

IEEM25-A-0198/A Dynamic Inter-hospital Operating Room Scheduling Problem Under Uncertain Emergency Arrivals and Surgery Durations

Yaohui Guo¹, Songzheng Zhao², Daiqiang Yin², Yang Wang², Abraham Punnen³

¹School of Management, Northwestern Polytechnical University, China

²Northwestern Polytechnical University, China

³Simon Fraser University, Canada

IEEM25-A-0200/Blockchain-enabled Outpatient Care: Maximizing the Integrated Service Capacity of Large-scale Hospitals

Chengye ZOU¹, Chun Ho WU¹

¹The Hong Kong University of Science and Technology, Hong Kong SAR

IEEM25-F-0148/Cyber Risk-aware Quantum-inspired Optimization of Home Healthcare Routing and Scheduling with Electric Autonomous Vehicles

Hooman Razavi¹, Shadan Ghaffary², Mostafa Hajiaghaei-Keshteli¹, Amirhossein Mostofi^{1,3}

¹Tecnologico de Monterrey, School of Engineering and Sciences, Puebla, Mexico

²School of Industrial Engineering, Iran University of Science and Technology, Tehran, Iran

³Auckland University of Technology, New Zealand

IEEM25-F-0478/The Application of a Machine Learning Ensemble Model to Improve Bed Allocation Strategies in Australian Healthcare System

Khabir Panchal¹, Ripon K. Chakraborty^{1,2}

¹UNSW Canberra, Australia

IEEM25-F-0362/Enhancing Medication Recommendation with Llm Text Representation

Shih-Wen Ke^{1,2}, Yu-Tzu Lee¹, Ling-Chien Hung²

¹National Central University, Taiwan

²Ditmanson Medical Foundation Chia-Yi Christian Hospital, Taiwan

IEEM25-A-0160/Patent Litigation Risk Factors in Oncology Pharmaceuticals: An Analysis of USA FDA Orange Book Listings

Chao-Chih Hsueh^{1,2}, Dar-Zen Chen²

¹National Pingtung University of Science and Technology, Taiwan

²National Taiwan University, Taiwan

IEEM25-F-0099/Risk Prioritization in Mini-grid Development: Enhancing Sustainability for Electrification

Abel Dosa¹, Victoria Dosa², Busola Dorcas Akintayo¹, Olubayo Babatunde², Desmond Ighravwe¹, Oludolapo Olanrewaju¹, Olufemi Ogunniran³

¹*Durban University of Technology, South Africa*

²*University of East London, United Kingdom*

³*Ladoke Akintola University of Technology, Nigeria*

ORAL SESSIONS

Systems Modeling and Simulation 3

2025-12-09 02:00 PM-03:30 PM 112

Session Chair(s): Panrawee RUNGSKUNROCH
Rajamangala University of Technology Thanyaburi
Erika OLIVEIRA-SILVA
ISP - Universidad de Valladolid

IEEM25-A-0028/Industrial Digital Twin for a Panel Manufacturing Process

Erika Oliveira-Silva^{*†1}, César de Prada², Carlos Gomez³, Albeto Vicente³, Fernando Tadeo⁴

¹ISP - Universidad de Valladolid, Spain

²University of Valladolid, Spain

³Sonae Arauco SL, Spain

⁴Univ. of Valladolid, Spain

IEEM25-F-0057/Passenger Flow Optimization in High-density Transit Hubs Using Simulation: Evidence from Bts Siam Station

Panrawee Rungskunroch^{*†1}, Patcharaporn Maneerat¹

¹Rajamangala University of Technology Thanyaburi, Thailand

IEEM25-A-0133/A Combined Discrete and Continuous Path Planning for Multiple Mobile Robots with Navmesh in Unity

Masateru Fujimoto^{*†1}, Tatsushi Nishi², Md. Kaimujjaman¹, Ziang Liu³, Tomofumi Fujiwara¹

¹Okayama University, Japan

²Ritsumeikan University, Japan

³Hosei University, Japan

IEEM25-F-0422/Adaptive Bayesian Estimation of Earthquake Casualties Under Spatiotemporal Dynamics

Fatemeh Zare Bidaki^{*†1}, Sibel Salman¹, Davood Shiri²

¹Koc University, Turkey

²Leeds University Business School, University of Leeds Leeds, United Kingdom

IEEM25-F-0372/Optimized Path Planning for Cooperative Data Collection of Uav and Ugv on Construction Sites

Seokhee Lee^{*†1}, Jeonghwa Hong¹, Seonghyeon Moon^{*2}

¹School of Industrial Systems Engineering, Gyeongsang National University, Korea, South

²Gyeongsang National University, Korea, South

IEEM25-F-0344/Exploring and Predicting Fiber Laydown: A Dual Approach to Spunbond Process Optimization Using Informed Machine Learning

Paulami Banerjee^{*†1}, Andre Schmeißer², Simone Gramsch³

¹Fraunhofer ITWM, Germany

²Fraunhofer Institute of Industrial Mathematics, Germany

³Frankfurt University of Applied Sciences, Germany

IEEM25-A-0231/Simulation-based Evaluation of Strategies for Reducing Truck Waiting Time at Japanese Wholesale Market

Keiji Nagano^{*†1}, Takashi Hasuike¹

¹Waseda University, Japan

IEEM25-F-0041/Aerodynamic Configuration Design of a Flying Car Fuselage Inspired by Whale Biomimicry

Ruyi Fan¹, Fengnian Tian^{*†1}, Xinyi Ye¹, Yanyu Chen¹, Chuqian Xu¹

¹Huazhong University of Science and Technology, China

2025-12-09 03:30 PM-05:30 PM Level 1: Foyer 1 - 2

IEEM25-A-0027/Paving the Way for a Hydrogen Economy

Eyrim Ursavas^{*+1}, Lucas Krol¹

¹*University of Groningen, Netherlands*

IEEM25-A-0055/A Markovian Model for Analyzing Transient Behavior in Multi-phase Degrading Systems

Zhaotong Lian^{*+1}, Zeyu LUO¹, Shan Su¹

¹*University of Macau, Macau*

IEEM25-A-0056/Energy Absorption Capacity of Sandwich Hybrid Structures with Composite Foam

Jakub Gajewski^{*+1}, Michal Rogala¹, David Valis²

¹*Lublin University of Technology, Poland*

²*University of Defence, Czech Republic*

IEEM25-A-0057/The Ordered Weighted Average Life Expectancy

Hadeel Baraheem^{*+1}, José M. Merigó¹

¹*University of Technology Sydney, Australia*

IEEM25-A-0058/Business and Economic Studies on Life Expectancy: A Bibliometric Review

Hadeel Baraheem^{*+1}, José M. Merigó¹

¹*University of Technology Sydney, Australia*

IEEM25-A-0064/Technology Management and Innovation: The Roles of Knowledge Sharing and Employee Engagement

Jeewhan Yoon^{*+1}

¹*Korea University, Korea, South*

IEEM25-A-0066/A Hybrid Data-model Digital Twin Approach for Remaining Useful Life Prediction of Harmonic Reducers

Xinyu Lu^{*+1}, Jing Lin¹, Zongyang Liu¹, Hanyang Liu¹

¹*School of Reliability and Systems Engineering, Beihang University, China*

IEEM25-A-0067/Through Glass Via Quality Control Base on Optical Imaging System

Mansik Jeon^{*+1}, Sangyeob Han¹, Youngae Gu¹, Do-hyun Cho², Jong Hoon Lee³, Jeehyun Kim¹

¹*Kyungpook National University, Korea, South*

²*Advanced Vacuum & Clean equipment Optimizer, Korea, South*

³*Laser Application Center, Institute of Advanced Convergence Technology, Kyungpook National University, Korea, South*

IEEM25-A-0093/Mitigating the Coffee-ring Effect of Aerosol Jet Printing Using Fabric-based Porous Substrates

Suyeon Seo⁺¹, Seong Je Park¹, Min-Woo Han², Seung Ki Moon^{*1}

¹*Nanyang Technological University, Singapore*

²*Dongguk University, Korea, South*

IEEM25-A-0112/The Rise of Data-driven Athletics: A Patentometric Analysis of Smart Sports

Huei-Ru Dong^{*1}, Mu-Hsuan Huang^{*2}

¹*Fu Jen Catholic University, Taiwan*

²*National Taiwan University, Taiwan*

POSTER SESSIONS

IEEM25-A-0137/Early Detection of Equipment Anomalies from Sparse and Irregular Defect Trends Via Dynamic Sampling and Probabilistic Forecasting with Temporal Refinement Using LSTM

Kyu-Hoon KIM^{*1}, Hyun-Deok Jang², Dong-Hee Lee^{*2}

¹Sungkyunkwan University, Samsung Institute of Technology, Korea, South

²Sungkyunkwan University, Korea, South

IEEM25-A-0138/An Interpretable Test Optimization Framework Using Tree-based Ensemble Models and SHAP for DRAM Test Time Reduction

Haneul Gwon^{*1}, Dong-Hee Lee^{*2}

¹Sungkyunkwan University, Samsung Institute of Technology, Korea, South

²Sungkyunkwan University, Korea, South

IEEM25-A-0195/Reinforcement Learning-based Residual Motion Planning for Domain-specific Robotic Tasks in Simulated Environments

Jongkyu kim^{*1}, Taeyong Kuc^{*2}

¹Sungkyunkwan University, Samsung Institute of Technology, Korea, South

²Sungkyunkwan University, Korea, South

IEEM25-A-0202/Efficacy of Using Large Language Model (LLM) Based Tools for Synthesizing Findings from Human Factors Research Studies.

Sashidharan Komandur^{*+1}

¹University of Inland Norway, Norway

IEEM25-A-0211/Vision Transformer-Enabled In-Situ Anomaly Detection in Sinter Based Additive Manufacturing

Yongrae Kim^{*1}, Seung Ki Moon², Haining Zhang³, Joon Phil Choi^{*1}

¹Korea Institute of Machinery and Materials, Korea, South

²Nanyang Technological University, Singapore

³NTU, Singapore

IEEM25-A-0221/A Deep Learning Framework for Inverse Design in Cae: Tandem Networks with Bayesian Optimization and Boundary Loss

Dongwook Yang^{*1}, Younju Kim^{*1}, Sungil Jang¹

¹Hyundai Mobis, Korea, South

IEEM25-A-0225/ML-assisted Co-optimization Framework for Enhanced Saf Production in Fischer-tropsch Synthesis

Heehyun Choi^{*+1}, Yongsang Lee¹, Hegwon Chung¹, Hyeon Yang¹, Hyeonseo Im¹, Chanmok Kim¹, Jonghwan Oh¹, Jiyong Kim¹

¹Sungkyunkwan University, Korea, South

IEEM25-A-0230/Integrating CO2 Hydrogenation into CCUS Supply Chains: A Roadmap for Refining Industry in South Korea

Hegwon Chung^{*+1}, Jonghwan Oh¹, Chanmok Kim¹, Hyeonseo Im¹, Hyeon Yang¹, Yongsang Lee¹, Heehyun Choi¹, Jiyong Kim¹

¹Sungkyunkwan University, Korea, South

IEEM25-A-0232/Production Planning in the Food Industry Considering Seasonal Demand Fluctuations

Jeongsu Lee^{*1}, Moonsoo Shin^{*1}, Sungmin Bae¹

¹Hanbat National University, Korea, South

IEEM25-A-0235/Agent-based Architecture and Prototype Implementation of a Distributed Manufacturing Execution System

Siwon Hong^{*1}, Moonsoo Shin^{*1}

¹Hanbat National University, Korea, South

IEEM25-A-0236/A Large Language Model-based Framework for Risk Assessment and Emergency Planning in Natural Disasters

Chao Fang^{*†1}, Dongliang Yang¹, Xiaohao Lei², Wei Wang¹

¹*Xi'an Jiaotong University, China*

²*Canvard College Beijing Technology and Business University, China*

IEEM25-A-0251/Adaptive Rescheduling in Flexible Flow Shops Using Advanced Reinforcement Learning with Graph Representations

Jun Kim^{*†1}

¹*Changwon National University, Korea, South*

IEEM25-A-0259/CFD-Based Ammonia Gas Dispersion Analysis in CVD Process for Safety

Yewon Kim^{*†1}, Won Bo Lee¹

¹*Seoul National University, Korea, South*

IEEM25-A-0284/Factories of the Future: Workforce Planning for Re-assembly Factories

Rana Koc^{*†1}, Esben Schukat¹

¹*WZL of RWTH Aachen University, Germany*

IEEM25-F-0018/Applicability of Markov chains to improve the supply of agroecological products in intermediate cities

Javier Cabrera^{*†1}, Gabriela Araujo²

¹*Catholic University of Cuenca, Ecuador*

²*Salesian Polytechnic University, Ecuador*

IEEM25-F-0067/Assessing Supply Chain Risk Management in Ghana's Pharmaceutical Industry

Emmanuel Ahatsi^{*†1}, Oludolapo Olanrewaju¹

¹*Durban University of Technology, South Africa*

IEEM25-F-0072/Deep Embedded Clustering (DEC)-based Chip Defect Map Classification and Machine Learning based Fab Data Imputation

Jeong Eon Ahn^{*†1}, Hyung Gun Kim¹, Du An Sun¹, Lee Kwang Won¹, Myung Gyun Choi¹

¹*Samsung Electronics, Korea, South*

IEEM25-F-0089/Negative Impact of Manual Manufacturing on Small to Medium Manufacturing Enterprises: A Systematic Literature Review

Brian Selowa^{*†1}, Olasumbo Makinde², Khathutshelo Mushavhanamadi¹

¹*University of Johannesburg, South Africa*

²*Senior Lecturer, South Africa*

IEEM25-F-0102/Fuzzy Ai-based Selection Model for Green Supplier Development Programs: A Data-driven Approach

Mohammed Yaqot^{*†1}

¹*Lusail University, Qatar*

IEEM25-F-0104/Green Vehicle Routing Problem for Hybrid Bike-sharing Rebalancing

Weining Shen^{*†1}, Yaoming Zhou^{†1}

¹*Shanghai Jiao Tong University, China*

IEEM25-F-0124/Using Blockchain and Ethereum Smart Contracts to Build an Aircraft Delay Insurance System

Keng-Chieh Yang^{*†1}, Wen-Ping Chao², Chun Ming Shih¹, Chia Chun Kao¹, Hsin I Chang¹

¹*National Kaohsiung University of Science and Technology, Taiwan*

²*Shu-Te University, Taiwan*

POSTER SESSIONS

IEEM25-F-0132/Enhancing Personalized Shopping in the Metaverse: A Fuzzy Multi-criteria Decision Model for Luxury Retail Layout Optimization

Hoi Yan Lam^{*1}, George T.S. Ho¹, Lap Wong¹, Daniel Y. Mo¹

¹The Hang Seng University of Hong Kong, Hong Kong SAR

IEEM25-F-0153/Developing AHP-based Frameworks for Evaluating Agricultural Waste as Corrosion Inhibitors for Mild Steel in process industries

Kareem Garuba¹, Olusegun Olorunniwo¹, Oladeji Ige^{*2}, Oludolapo Olanrewaju²

¹Obafemi Awolowo University, Ile-Ife, Nigeria

²Durban University of Technology, South Africa

IEEM25-F-0158/Comparative Overview of Solar Engineering Education in Zimbabwe: Short-term and Blended Training

Ratidzo Pasipamire^{*1}, Hagreaves Kumba², Joseph Akpan^{*2}, Oludolapo Olanrewaju²

¹Midlands State University, South Africa

²Durban University of Technology, South Africa

IEEM25-F-0171/Collaborative Autonomous Truck and Electric Tricycle Delivery for Inventory Routing Problems

Shih-Hao Lu¹, Rohit Raj^{*1}, Chia-Chen Chang¹

¹National Taiwan University of Science and Technology, Taiwan

IEEM25-F-0172/Optimizing Last-mile Delivery Efficiency Through a Multi -vehicle and Multi-area Collaboration Model

Shih-Hao Lu¹, Chia Chen Chang^{*1}, Rohit Raj¹

¹National Taiwan University of Science and Technology, Taiwan

IEEM25-F-0182/Whether to Implement Drone Delivery Services: A Strategic Two-echelon Location-allocation-fleet-sizing Perspective

Yating Feng¹, Xiang ZhiYu², Xexin Cao^{*3}, Maohua Cai⁴, Xinglu Liu^{*3}

¹Nanjing Agricultural University, China

²NanTongUniversity, China

³Tsinghua University, China

⁴Shanghai University, Shanghai, China

IEEM25-F-0184/Optimized Agent Shift Scheduling Using Multi-Phase Allocation Approach

Sanalkumar K^{*1}, Koushik Dey^{*1}, Swati Meena¹

¹Sprinklr India Private Limited, India

IEEM25-F-0222/Optimal Shared Monthly Parking Subscriptions

Zhao Qianqi^{*1}, Kaifeng Ji¹, Feixue Liu², Kefan Lai², Yuexin Kang¹, Kai Zhang^{*1}, Xinglu Liu¹

¹Tsinghua University, China

²The University of Hong Kong, Hong Kong SAR

IEEM25-F-0232/TVF-EMD with Parameter Optimization for Rolling Bearing Signal Denoising Under Strong Noise Interference

Mingyu Shen^{*1,2,3}, Lixiang Duan^{*1,2,3}, Na Zhang^{1,2,3}, Nafei Wang^{1,2,3}, Shuang Cai⁴

¹China University of Petroleum (Beijing), Beijing, PR. China

²Ministry of Emergency Management, Beijing, PR. China

³State Administration for Market Regulation, Beijing, PR. China

⁴Hulunbuir University, Hulunbuir, PR. China

IEEM25-F-0241/An Analytical Model for Evaluating and Improving Logistics Service Quality in Community Fresh Food E-commerce: a Case Study of Freshippo Using Ahp and Servqual

Carman Ka Man Lee¹, M. F. ZHU¹, K. L. Keung^{*1}

¹The Hong Kong Polytechnic University, Hong Kong SAR

IEEM25-F-0244/Hybrid Deep Neural Time Series Forecasting Framework with Empirical Mode Decomposition and Language Model

Mathew Serek^{*1}, Sutharshan Rajasegarar^{*1}

¹Deakin University, Australia

IEEM25-F-0267/Comparing Qaoa Implementations of Penalty Function and Xy-mixer for Constrained Optimization: Application to the Circular Maximum Diversity Problem on Ibm Quantum Computer

Nathan Rhodes^{*1}, Sandy Spiers², Hoa Bui², Maiyuren Srikumar¹, Sarang Kulkarni², Ryan Loxton², Michael Egan¹

¹KPMG Australia, Australia

²Curtin University, Australia

IEEM25-F-0283/Dynamic Evolution of Technological R&D Strategies of Enterprises in Complex Product R&D Networks

Yu Wang^{*1}, Naiding Yang², Yuheng Huang³

¹YanShan University, China

²Northwestern Polytechnical University, China

³School of Management, Northwestern Polytechnical University, China

IEEM25-F-0299/A Discrete Flower Pollination Algorithm for Twin Automatic Stacking Cranes Scheduling

Hsien-Pin Hsu^{*1}

¹National Kaohsiung University of Science and Technology, Taiwan

IEEM25-F-0371/Computer Vision-based Handwritten Text-area Detection for Industrial Document Digitization

Jeonghwa Hong¹, Sangyeol Yu¹, Jinwoo Kim², Junhyeok Park³, Seonghyeon Moon^{*4}

¹School of Industrial Systems Engineering, Gyeongsang National University, Korea, South

²Department of Civil and Environmental Engineering, Hanyang University, Seoul, Korea, South

³Korea Institute of Geoscience and Mineral Resources (KIGAM), Daejeon, Korea, South

⁴Gyeongsang National University, Korea, South

IEEM25-F-0378/Assessment of AI-Adoption in Product Development by a Maturity Model Based on Technology Acceptance Scoring

Oliver Bleisinger^{*1}, Carolin Gewalt², Jana Heinrich³, Martin Eigner^{*4}

¹University of Kaiserslautern-Landau, Germany

²em engineering methods AG, Germany

³Fraunhofer Institute for Experimental Software Engineering, Germany

⁴EIGNER Engineering Consult, Germany

IEEM25-F-0399/3d Location Perceiving Method with Contour Recognition for Improving the Accuracy of Human-robot Collaborative Assembly

Yitian You¹, Jun He², Haipeng Sun¹, Xiaonan Yang^{*1}, Deyu Sun¹, Haonan Fang¹

¹Beijing Institute of Technology, China

²Shanghai Spaceflight Precision Machinery Institute, China

IEEM25-F-0433/MAPF Scenario Modelling for Human-robot Collaboration

Xiaonan Yang^{*1}, Xuan Tian¹, Yaoguang Hu¹, Jingfei Wang¹, Jianxin Yang², Xiang Hu¹, Wenping Xu¹, Mingyu Li¹

¹Beijing Institute of Technology, China

²Information Center, China North Industries Group Corporation, China

IEEM25-F-0489/An Integrated Dynamic Group Maintenance Strategy for Multi-component Systems with Adaptive Bayesian Updates

Yi Chen^{*1}, Yuhan Ma¹, Yu Zhao^{*1}

¹Beihang University, China

POSTER SESSIONS

IEEM25-F-0496/An Adaptive Extended State Observer for Liquid Water in Polymer Electrolyte Membrane Fuel Cells

haisong xu^{*1}, Yuxin Huang¹, Lei Wang^{*1}, Hongye Su¹

¹*Zhejiang University, China*

IEEM25-F-0498/Optimizing Task Reliability with Predictive Maintenance Under Incomplete Information and Limited Spare Resources

Fanping Wei^{*1}, Xiaobing Ma¹, Li Yang^{*1}, Yi Chen¹

¹*Beihang University, China*

IEEM25-F-0507/Waste Collection Routing Problem with Electric Vehicle

Sekar Sakti^{*1}, Anna Maria Sri Asih¹

¹*Universitas Gadjah Mada, Indonesia*

IEEM25-F-0526/Performance Evaluation for Lithium-ion Battery Based on Health Indicators: A Review

Chun Su^{*1}, Ran Xia¹

¹*Southeast University, China*

PRESENTER GUIDES

1. IEEM Presenter Attendance Policy – It is such that

- 1.1. Acceptance is dependent on the stipulation that at least one author will sign up for the conference and present the paper there.
- 1.2. In the event that the presentation is not delivered at the conference, IEEM reserves the right to prevent it from being distributed after the conference (for example, by removing it from submission to IEEE Xplore).

2. Pre-Upload Presentation Files to the IEEM Portal

Cut-off time is 11:55PM Singapore Time (GMT+8) on Specified Dates

2.1. Pre-Upload Poster Presentation – 17 Oct to 30 Oct 2025

Posters submitted before 30 Oct will be printed for free by the conference. Please print and bring your own poster to the conference if you miss the deadline.

Posters should be A0 size, 1189mm (Height) x 841mm (Width), vertical/portrait orientation. The suggested image size is 16 Megapixels, or 4680 x 3310 pixels at 100 dpi.

Using the Poster Template is preferred, but not mandatory.
Additionally, refer to the notes (5) below regarding poster preparation.

2.2. Pre-Upload Oral Presentation – 17 Oct to 15 Nov 2025

Pre-uploading an oral presentation is not compulsory. If you are unable to make it, you can bring your presentation on a thumb drive to the presentation room and arrive at least fifteen minutes before the start of the session.

Oral presentation file should not be larger than 3.5GB and be in the PowerPoint format (.ppt/.pptx).

Using the Oral Presentation Power Point Template is preferred, but not mandatory.

PowerPoint slides - 16:9 aspect ratio or 1920 x 1080 pixels

2.3. How to Upload A Presentation File

To save time on site, it is recommended that you upload your presentation in advance.

- a. Log in to the IEEM site using your email address and password
- b. Click "Upload Presentation" in the left menu panel (this function is automatically enabled for registered presenters).

Presenter Guides (cont'd)

3. Making Your Oral Presentation

- 3.1. Each oral presentation lasts for a total of 15 minutes, including Q&A and speaker change over.
- 3.2. You must arrive in the presentation room at least 15 minutes prior to the session's start time. For information on the precise presentation schedules, please consult the final program.
- 3.3. Each presentation room has
 - A screen/ screen and projector (smaller rooms have large LCD screens)
 - Lectern with in-built computer and preview screen using Office 365 with PowerPoint
 - Lectern microphone and sound system
 - The lectern has USB input and HDMI input for external laptops
 - A presenter clicker
- 3.4. Show consideration and keep to the 15 minutes allotted for your presentation. At the conclusion of the meeting, all presentation files will be deleted.

4. Making Your Poster Presentation

- 4.1. Poster display area is 2.4m (Height) x 1m (Width). Finished Size of the Poster Should Measure: A0 in Portrait Format, 1189mm Height x 841mm Width
- 4.2. To make it simple for readers to recognize your abstract, prominently display the ID of your accepted article, Title, and Author Name(s) at the top of the poster. The presenter's name must be highlighted and written in capital letters.
- 4.3. The author's name, email address, and mailing address must be included in case viewers want to get in touch with you for further information.
- 4.4. Tuesday 9 December 2025 is Poster Presentation Day

a. Key Timings

**From 1:30 pm: Author Presenters Put Up Posters.
Must be completed by 2:30pm**

Poster boards are pre-assigned and marked with your Abstract ID

Adhesive tapes and scissors are available at the Poster Help Desk, nearby the poster boards. If you have special needs for your poster presentation, please bring those supplies with you to the meeting.

From 3:30pm to 5:30pm: Presenter Presence to Take Questions from Viewers Posters must be removed by 5:30 pm.

- b. Collect your pre-printed poster from the Help Desk (If Eligible)
You will need to bring along your Paper/Abstract ID.

c. Poster Layout

Row 1	F-0489	F-0498	F-0526	A-0055	A-0137	F-0232	A-0259	A-0236	Row 1
	F-0171	F-0172	A-0195	A-0225	F-0067	F-0102	A-0027	F-0507	
Row 2	A-0067	A-0093	A-0211	F-0104	F-0182	F-0267	F-0299	A-0064	Row 2
	A-0232	A-0235	A-0251	A-0284	F-0072	A-0001	F-0018	F-0153	
Row 3	F-0371	A-0112	A-0138	F-0244	A-0221	F-0124	F-0132	F-0241	Row 3
	A-0057	A-0066	F-0184	F-0222	F-0399	F-0433	A-0202	F-0496	

MASTER SCHEDULE

IEEM2025 Final Program (Last Updated: 05 November 2025)							
Program uses AEDT (Australian Eastern Daylight Time) UTC/GMT +11 Hours							
Sunday, 7 December 2025							
15:00 - 17:30	Registration & Name Badge Pick Up Afternoon Coffee/Tea - Level 1, Foyer 1.7, Foyer 1.8						
18:30 - 20:30	Invite Only Committee Dinner						
Monday, 8 December 2025							
Program uses AEDT (Australian Eastern Daylight Time) UTC/GMT +11 Hours							
08:00 - 17:30	Registration & Name Badge Pick Up - Level 1, Foyer 1.7, Foyer 1.8						
09:00 - 10:45	AM1 Opening & Keynote Presentations - Level 1, Room 109 & 110						
Keynote Address 1: "Transitioning from Industry 4.0 to Industry 5.0: A Human-Centric Approach"							
Saeid Nahavandi, Inaugural Associate Deputy Vice-Chancellor Research and Chief of Defence Innovation, Swinburne University of Technology							
Keynote Address 2: "Public Funding to Cross the Valley of Death: Space as a Laboratory"							
Dr Andrea P Belz, President, IEEE Technology and Engineering Management Society TEMS							
Vice-Dean of Transformative Initiatives, Research Director, Information Science Institute, Director, Center for Research in Space Technologies (CREST) and Professor of Practice in Industrial and Systems Engineering,							
USC Viterbi School of Engineering, University of South California (USC)							
Morning Coffee/Tea - Level 1 Foyer 1.7, Foyer 1.8							
10:45 - 11:15	AM2 Scheduled Presentations						
11:15 - 13:00							
Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 111	Room 112
Supply Chain Mgmt SCM-01	Tech & Knowledge Mgmt TKM-01	Prodn Planning & Control PPC	Mfg Systems MS-01	Svc Inno & Mgmt SIM-01	Qlty Control & Mgmt QCM-01	Intelligent Systems IS-01	Big Data & Analytics BDA-01
Dr Hongrui Liu Dr Samira Alvandi IEEM25-A-0006 IEEM25-F-0129 IEEM25-F-0155 IEEM25-F-0188 IEEM25-A-0082 IEEM25-F-0457 IEEM25-F-0247	Prof Aries Susanty Mr Qingsong Zhao IEEM25-F-0037 IEEM25-F-0046 IEEM25-F-0129 IEEM25-F-0143 IEEM25-F-0159 IEEM25-F-0188 IEEM25-F-0278 IEEM25-F-0199	Dr Xin Li Prof Daniel Y. Mo IEEM25-F-0141 IEEM25-F-0091 IEEM25-F-0388 IEEM25-A-0130 IEEM25-F-0130 IEEM25-F-0332 IEEM25-F-0093	Prof Ran Jin Dr Harumi Haraguchi IEEM25-F-0036 IEEM25-F-0068 IEEM25-F-0088 IEEM25-F-0094 IEEM25-A-0130 IEEM25-F-0031 IEEM25-F-0093	Dr Say Wei Foo IEEM25-F-0043 IEEM25-F-0095 IEEM25-F-0149 IEEM25-F-0281 IEEM25-F-0404 IEEM25-A-0145 IEEM25-A-0266	Prof Amilaiva Mukherjee Dr Sakchai Rakkam IEEM25-F-0030 IEEM25-F-0052 IEEM25-A-0016 IEEM25-F-0123 IEEM25-F-0163 IEEM25-F-0185 IEEM25-F-0517	Dr Won-Lung Dr Zhipeng Zhang IEEM25-A-0034 IEEM25-F-0187 IEEM25-F-0034 IEEM25-A-0216 IEEM25-F-0151 IEEM25-F-0289 IEEM25-F-0343 IEEM25-F-0532	Prof Seonghyeon Moon Dr Okafeim Olatunji IEEM25-F-0120 IEEM25-F-0284 IEEM25-F-0006 IEEM25-F-0212 IEEM25-F-0259 IEEM25-F-0343 IEEM25-F-0532
Lunch - Level 1 Foyer 1.7, Foyer 1.8 (Name Badge Required for Admission)							
PM1 Scheduled Presentations							
13:00 - 14:00							
14:00 - 15:30							
Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 111	Room 112
Supply Chair Mgmt SCM-02	Tech & Knowledge Mgmt TKM-02	Info Processing & Engrg IPE	Mfg Systems MS-02	Engrg Edn & Training EET-01	Decision & Analysis Methods DAM-01	Reliability & Maint Eng RME	Big Data & Analytics BDA-02
Prof Meimei Zheng Dr Naly Rakatos IEEM25-F-0235 IEEM25-F-0254 IEEM25-F-0255 IEEM25-F-0279 IEEM25-F-0288	Dr Yan-Ling Cai Prof Tae-Eun Kim IEEM25-F-0208 IEEM25-F-0221 IEEM25-F-0224 IEEM25-F-0253 IEEM25-F-0265	Dr Janne Harkonen Prof Seung Ki MOON IEEM25-F-0092 IEEM25-F-0136 IEEM25-F-0203 IEEM25-F-0328 IEEM25-F-0475	Prof Aries Susanty Prof On Prakash Yadav IEEM25-F-0147 IEEM25-F-0166 IEEM25-A-0032 IEEM25-F-0207 IEEM25-F-0258	Dr Carman Ka Man Lee Dr Steven Jiang IEEM25-F-0035 IEEM25-F-0076 IEEM25-F-0118 IEEM25-A-0009 IEEM25-F-0290	Prof Zaul Haque Munim Prof Anup Pradhan IEEM25-F-0156 IEEM25-F-0198 IEEM25-F-0271 IEEM25-F-0481 IEEM25-F-0027	Dr Ripon K. Chakraborty IEEM25-F-0146 IEEM25-F-0331 IEEM25-F-0323 IEEM25-F-0263 IEEM25-F-0395	Prof Seonghyeon Moon Dr Okafeim Olatunji IEEM25-F-0387 IEEM25-F-0439 IEEM25-F-0511 IEEM25-F-0366

Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 111	Room 112
Supply Chain Mgmt SCM-03	Tech & Knowledge Mgmt TKM-03	Operations Research OR-01	Project Mgmt PM	Engg Edn & Training EET-02	Engg Economy & Cost Analysis EECA-01	Healthcare Sys & Mgmt HSM-01	Sys Modelling & Simulation SMS-01
Dr Sixiang Zhao IEM25-A-0099 IEM25-F-0384 IEM25-F-0402 IEM25-F-0465 IEM25-F-0315 IEM25-F-0219 IEM25-A-0240	Prof Tae-Eun Kim Prof Diliha Nakandala IEM25-F-0321 IEM25-F-0335 IEM25-F-0354 IEM25-F-0401 IEM25-F-0139 IEM25-F-0197 IEM25-F-0304	Dr Mingyao Qi Dr Amirhossein Mostofi IEM25-F-0090 IEM25-F-0150 IEM25-F-0277 IEM25-A-0249 IEM25-F-0317 IEM25-F-0318 IEM25-F-0313 IEM25-F-0050 IEM25-F-0079 IEM25-F-0089	Prof Norbert Trautmann Prof Peijun Guo IEM25-F-0150 IEM25-F-0353 IEM25-F-0277 IEM25-A-0249 IEM25-F-0317 IEM25-F-0318 IEM25-F-0313 IEM25-F-0050 IEM25-F-0079 IEM25-F-0089	Dr Carman Ka Man Lee Dr Senewi Kiridena IEM25-F-0261 IEM25-F-0353 IEM25-F-0437 IEM25-F-0480 IEM25-F-0494 IEM25-F-0066 IEM25-F-0301 IEM25-F-0413	Dr Haiying Ma IEM25-F-0085 IEM25-F-0117 IEM25-F-0308 IEM25-A-0094 IEM25-A-0144 IEM25-F-0301 IEM25-F-0446	Prof Kac-Kuen Hu Dr Ripon K. Chakraborty IEM25-F-0291 IEM25-F-0337 IEM25-F-0338 IEM25-F-0336 IEM25-F-0176 IEM25-F-0333 IEM25-F-0427 IEM25-F-0098	Dr Sekar Sakli IEM25-F-0220 IEM25-F-0228 IEM25-F-0324 IEM25-F-0336 IEM25-F-0339 IEM25-F-0427 IEM25-F-0098
Tuesday, 9 December 2025 Program uses AEDT (Australian Eastern Daylight Time) UTC/GMT +11 Hours Registration & Name Badge Pick Up (Ends 2pm) - Level 1, Foyer 1.7, Foyer 1.8 AM1 Scheduled Presentations							
Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 111	Room 112
Supply Chain Mgmt SCM-04	Tech & Knowledge Mgmt TKM-04	Operations Research OR-02	E-Biz & E-Commerce EBEC	Human Factors HF-01	Decision & Analysis Methods DAM-02	Intelligent Systems IS-02	Big Data & Analytics BDA-03
Dr Zahra Dr Shupra Pandey IEM25-A-0099 IEM25-A-0124 IEM25-A-0127 IEM25-A-0193 IEM25-F-0400 IEM25-A-0110 IEM25-F-0379	Dear Prof Fang-Mei Teng Dr Yan-Ling Cai IEM25-F-0506 IEM25-F-0508 IEM25-F-0519 IEM25-A-0053 IEM25-A-0095 IEM25-F-0431 IEM25-F-0444 IEM25-F-0529	Prof Norbert Trautmann Dr Carman Ka Man Lee IEM25-F-0297 IEM25-F-0202 IEM25-F-0246 IEM25-A-0046 IEM25-A-0059 IEM25-F-0319 IEM25-F-0097	Dr Eko Heru Prasetyo Dr Li-Ting Huang IEM25-F-0357 IEM25-F-0375 IEM25-F-0497 IEM25-F-0270 IEM25-A-0131 IEM25-A-0170	Prof Arjes Susanty Prof Ziaul Haque Munim IEM25-F-0031 IEM25-F-0036 IEM25-F-0192 IEM25-F-0251 IEM25-F-0177 IEM25-F-0485 IEM25-A-0151 IEM25-F-0225	Prof Anup Pradhan Dr Ripon K. Chakraborty IEM25-A-0108 IEM25-A-0248 IEM25-F-0492 IEM25-F-0285 IEM25-F-0467 IEM25-A-0063 IEM25-F-0017 IEM25-F-0080	Prof Budi Santosa Dr Nur Hamid IEM25-F-0302 IEM25-F-0493 IEM25-F-0196 IEM25-A-0214 IEM25-A-0054 IEM25-F-0326 IEM25-A-0045 IEM25-F-0024 IEM25-F-0355	Prof Ran Jin IEM25-A-0114 IEM25-A-0147 IEM25-F-0603 IEM25-A-0121 IEM25-F-0193 IEM25-F-0268 IEM25-A-0024 IEM25-F-0272
10:30 - 11:00 Morning Coffee/Tea - Level 1 Foyer 1.7, Foyer 1.8 11:00 - 12:30 AM2 Scheduled Presentations							
Room 103	Room 104	Room 105	Room 106	Room 107	Room 108	Room 111	Room 112
Supply Chain Mgmt SCM-05	Tech & Knowledge Mgmt TKM-05	Operations Research OR-03	Mfg Systems MS-03	Human Factors HF-02	Safety, Security & Risk Mgmt SSRM-01	Intelligent Systems IS-03	Sys Modelling & Simulation SMS-02
Dr Pham Quang Huy IEM25-F-0298 IEM25-F-0414 IEM25-A-0171 IEM25-F-0022 IEM25-A-0154 IEM25-A-0157	Dr Martin Ho Prof Arjes Susanty IEM25-A-0101 IEM25-A-0107 IEM25-A-0091 IEM25-A-0197 IEM25-F-0334 IEM25-A-0227	Dr Mingyao Qi Prof Sheng Jin Kweon IEM25-A-0142 IEM25-A-0143 IEM25-A-0153 IEM25-A-0158 IEM25-A-0161 IEM25-A-0168	Dr Harumi Haraguchi Dr Shiva Abdo IEM25-F-0312 IEM25-F-0408 IEM25-F-0420 IEM25-F-0440 IEM25-F-0119 IEM25-A-0282	Dr Myung Hwan Yun Prof Ziaul Haque Munim IEM25-F-0495 IEM25-A-0134 IEM25-A-0238 IEM25-F-0100 IEM25-F-0303 IEM25-F-0101	Prof Byung Kwon Lee IEM25-F-0125 IEM25-F-0269 IEM25-A-0128 IEM25-F-0477 IEM25-F-0121 IEM25-F-0499	Prof Anup Pradhan Prof Budi Santosa IEM25-F-0412 IEM25-A-0117 IEM25-A-0119 IEM25-A-0122 IEM25-F-0368 IEM25-F-0363	Dr Yuan Chai Dr Ahmad Shah Hizam IEM25-F-0381 IEM25-A-0140 IEM25-F-0189 IEM25-A-0122 IEM25-F-0361 IEM25-F-0091
Lunch - Level 1 Foyer 1.7, Foyer 1.8 (Name Badge Required for Admission) 12:30 - 13:30 PM1 Scheduled Presentations							

NOTES



香港城市大學
City University of Hong Kong

College of Engineering
Department of Systems Engineering

系統工程學系



Master of Science in Engineering Management (MSEM)

理學碩士(工程管理學)

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Programme Code: P56

From Engineers to Engineering Managers

This programme aims to develop students' managerial skills, innovation and entrepreneurial spirit, and leadership capabilities in the context of engineering management and entrepreneurship.



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The Department of Systems Engineering (SYE) aims to help Hong Kong meet the technological and managerial challenges of the 21st century by engaging in industrially relevant research and development activities and by committing to foster closer research collaborations and more executive development and consultancy activities with Hong Kong and China's industrial sectors.



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This programme aims to equip students with the analytical, managerial and behavioural skills and knowledge that they need to excel in contemporary engineering management. Students should be able to undertake engineering management projects/research and to turn innovative ideas into practical applications. The programme meets the educational needs of engineers who are making the transition to engineering managers or technological entrepreneurs.



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4 core courses + 3 elective courses + dissertation

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Project Management

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Business Process Improvement and
Innovation

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Managers

Industrial Marketing Management for
Engineers

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with Artificial Intelligence

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Quality and Reliability Engineering

Risk and Decision Analysis

Supply Chain Management

For a full list of elective courses, please visit www.cityu.edu.hk/sye/msem/



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SCHOLARSHIP

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Information on other scholarships and financial assistance schemes is available on the website of the University's Student Development Services (www.cityu.edu.hk/sds/).



ENTRANCE REQUIREMENTS

Applicants must hold a Bachelor degree in engineering or science, or the equivalent, or be a graduate member or qualified for graduate membership of a professional engineering institution.



ENGLISH PROFICIENCY REQUIREMENTS

Non-local candidates from an institution where the medium of instruction is not English should fulfil one of the following English proficiency requirements:

TOEFL and IELTS scores are considered valid for two years from the test date and must be valid at the time of submission of application.



a TOEFL score of 550 (paper-based test) or 79 (Internet-based test);



an overall band score of 6.5 in the International English Language Testing System (IELTS);



a score of 450 in the new College English Test (CET6) of mainland China or a pass in the old CET-6 test; or



other equivalent qualifications.

Enquiries

Tel: 34429321
Email: sye.office@cityu.edu.hk
Website: www.cityu.edu.hk/sye/msem





THE HONG KONG
POLYTECHNIC UNIVERSITY
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Department of
Industrial &
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