



浙江工商大学
ZHEJIANG GONGSHANG UNIVERSITY



浙江省自动化学会
ZHEJIANG ASSOCIATION OF AUTOMATION



IEEE
SMC
Systems, Man, and Cybernetics Society



iCaMaL 2026

2026 International Conference on Automation in Manufacturing, Transportation and Logistics

AI-Driven Systems for Next-Generation Industrial Automation



August 12-14, 2026 | Hangzhou, China

Welcome to iCaMaL 2026!

Dear attendees,

We are pleased to welcome you to Hangzhou for the 2026 International Conference on Automation in Manufacturing, Transportation and Logistics (iCaMaL 2026). The organizing committee includes researchers from Zhejiang Gongshang University and Zhejiang Association of Automation.

The conference theme is AI-Driven Systems for Next-Generation Industrial Automation. iCaMaL 2026 focuses on the pivotal role of advanced automation methods and intelligent technologies in the interconnected sectors of manufacturing, transportation, and logistics. By providing a high-level forum for academia, industry, and management agencies, the conference fosters cross-disciplinary collaboration to drive the next generation of industrial efficiency, green logistics, and supply chain resilience.

The conference program features 3 keynote speeches, 111 oral presentations distributed across 18 sessions. For the keynote speeches, we are pleased to welcome Prof. Jiming Chen (Zhejiang University of Technology, China), Prof. Fei Tao (Beihang University, China), Prof. Andrea D'Ariano (Roma Tre University, Italy).

We extend our heartfelt appreciation to our technical support partners: IEEE RAS Society and IEEE SMC Society. We also extend our warmest thanks to all the dedicated individuals who have played a crucial role in the organization of iCaMaL 2026. Your contributions are invaluable and we look forward to a remarkable conference.

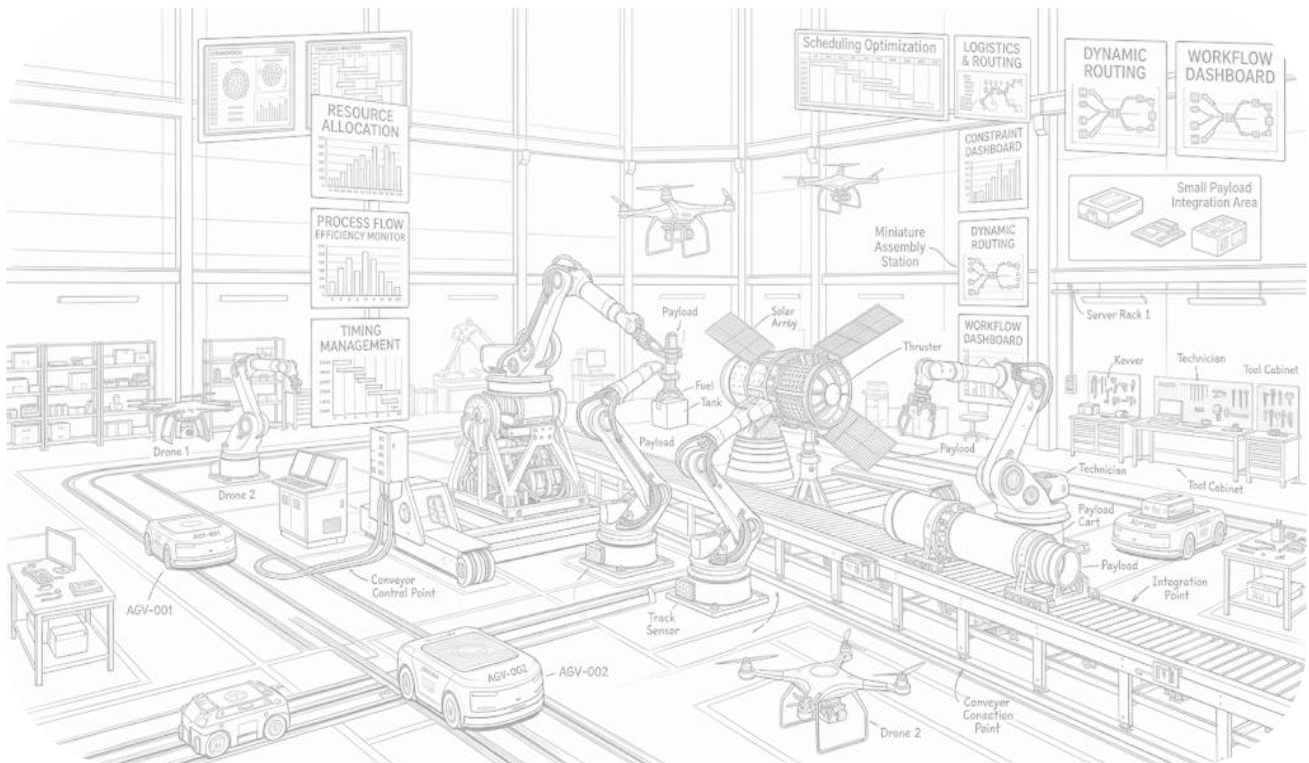
Best regards,

Organizing Committee of iCaMaL 2026



CONTENT

Organizing Committee.....	1
Steering Committee.....	1
Program Overview.....	2
Keynotes	3
Parallel Session Overview	6
Oral Presentation.....	9



Organizing Committee

- General Chair: MengChu Zhou, Zhejiang Gongshang University
- General Co-Chair: Wenfeng Li, Wuhan University of Technology
- Program Chair: Shouguang Wang, Zhejiang Gongshang University
- Program Co-Chair: Wu Ouyang, Wuhan University of Technology
- Program Co-Chair: Yixiong Feng, Zhejiang University
- Program Co-Chair: Yebin Wang, Mitsubishi Electric Research Laboratories
- Special Session Chair: Yaping Fu, Qingdao University
- Special Session Chair: Jing Bi, Beijing University of Technology
- Tutorial/Workshop Chair: Liang Qi, Shandong University of Science and Technology
- Tutorial/Workshop Chair: Remigiusz Wisniewski, University of Zielona Góra
- Industrial Chair: Chang Liu, Yangtze Delta Region Institute of Tsinghua University
- Industrial Chair: Haitao Yuan, Wenchang International Aerospace City Administration
- Publicity Chair: Haoyue Liu, Zhejiang Gongshang University
- Publicity Chair: M. (Sepehr) Ghahramani, Birmingham City University
- Publication Chair: Bo Huang, Nanjing University of Science and Technology
- Publication Chair: Ziyang Zhao, Northeastern University
- Award Chair: Weimin Wu, Zhejiang University
- Award Chair: Fajun Yang, Shanghai University
- Finance Chair: Dan You, Zhejiang Gongshang University
- Organizing Committee Chair: Ligang Dong, Zhejiang Gongshang University
- Organizing Committee Chair: Chuanhuang Li, Zhejiang Gongshang University
- Organizing Committee Chair: Siya Yao, Zhejiang Gongshang University

Steering Committee

- | | |
|---|--|
| • MengChu Zhou, Zhejiang Gongshang Univ. (Chair) | • Justyna Patalas-Maliszewska, Univ. of Zielona Góra |
| • Wenfeng Li, Wuhan Univ. of Tech. (Co-Chair) | • Naiqi Wu, Macau Univ. of Sci. & Tech. |
| • Gabriel Lodewijks, Univ. of Newcastle | • Qi Kang, Tongji Univ. |
| • George Guoquan Huang, Hong Kong Polytechnic Univ. | • Shixin Liu, Northeastern Univ. |
| • Jiliang Luo, Huaqiao Univ. | • Ting Qu, Jinan Univ. |
| • Mingcong Deng, Tokyo Univ. of A. & T. | • Xiaou Li, CINVESTAV-IPN |
| | • Xianzhong Zhou, Nanjing Univ. |

We sincerely thank all the reviewers for their hard work to the review process of iCaMaL 2026. Their dedication and effort have been critical to ensuring the high-quality standards of iCaMaL 2026. The time and expertise they have contributed, from carefully reviewing submissions to providing constructive feedback, have greatly enriched the conference. We deeply appreciate their invaluable support!



Program Overview

iCaMaL 2026 is hosted at Hangzhou Wassim Resorts Hotel (Address: No. 301, 27th Street, Qiantang District, Hangzhou, Zhejiang, China). Please refer to the table below for detailed daily arrangements and venue information.

Date	Time	Schedule	Location
Wednesday, August 12th	10:00-20:00	Registration & Welcome	Hotel Lobby
	18:00-20:00	Welcome Buffet Dinner	Breakfast Restaurant (活力早餐厅) (1 st Floor)
Thursday, August 13th	9:00-9:10	Opening Ceremony	Letter Hall (信合厅) (3 rd Floor)
	9:10-9:55	Keynote Speech 1 - Prof. Jiming Chen - AI and Multi-Agent Systems for Industry	
	9:55-10:40	Keynote Speech 2 - Prof. Fei Tao - Digital Twin: From Theory to Practice	
	10:40-11:25	Keynote Speech 3 - Prof. Andrea D'Ariano - Aircraft Timing, Sequencing and Routing Optimization in Terminal Control Areas During Disturbances	
	11:25-13:30	Lunch Break	Wanxin Hall (万信厅) (3 rd Floor)
	13:30-15:00	Parallel Sessions	1A: Letter Hall (信合厅) (3 rd Floor) 1B: Jinxin Hall (锦心厅) (3 rd Floor) 1C: To The Far Hall (致远厅) (3 rd Floor)
	15:00-15:20	Coffee Break	/
	15:20-17:05	Parallel Sessions	2A: Letter Hall (信合厅) (3 rd Floor) 2B: Jinxin Hall (锦心厅) (3 rd Floor) 2C: To The Far Hall (致远厅) (3 rd Floor)
	17:30-19:30	Banquet (& Best Student Paper Award)	Wanxin Hall (万信厅) (3 rd Floor)
Friday, August 14th	8:30-10:00	Parallel Sessions	3A: Letter Hall (信合厅) (3 rd Floor) 3B: Jinxin Hall (锦心厅) (3 rd Floor) 3C: To The Far Hall (致远厅) (3 rd Floor)
	10:00-10:20	Coffee Break	/
	10:20-11:50	Parallel Sessions	4A: Letter Hall (信合厅) (3 rd Floor) 4B: Jinxin Hall (锦心厅) (3 rd Floor) 4C: To The Far Hall (致远厅) (3 rd Floor)
	11:50-13:30	Lunch Break	Wanxin Hall (万信厅) (3 rd Floor)
	13:30-15:00	Parallel Sessions	5A: Letter Hall (信合厅) (3 rd Floor) 5B: Jinxin Hall (锦心厅) (3 rd Floor) 5C: To The Far Hall (致远厅) (3 rd Floor)
	15:00-15:20	Coffee Break	/
	15:20-17:05	Parallel Sessions	6A: Letter Hall (信合厅) (3 rd Floor) 6B: Jinxin Hall (锦心厅) (3 rd Floor) 6C: To The Far Hall (致远厅) (3 rd Floor)
	17:30-19:30	Farewell Dinner	Wanxin Hall (万信厅) (3 rd Floor)

Keynotes

Jiming Chen



Jiming Chen received the Ph.D. degree in Control Science and Engineering from Zhejiang University in 2005. He was vice Dean of Faculty of Information Technology, deputy director of the State Key laboratory of Industrial Control Technology, and Director of Industrial Process Control, Zhejiang University. He was a visiting researcher at the University of Waterloo from 2008 to 2010. Now he is a Chair Professor with the Department of Control Science and Engineering, Zhejiang University, and also is the president of Zhejiang University of Technology.

He is the Editor in Chief of IEEE Networks, He also serves/served on the editorial boards of multiple IEEE Transactions, e.g., IEEE TNCS, IEEE TPDS, IEEE TIE, IEEE TFS and the General Co-chairs for multiple IEEE/ACM conferences. He was a recipient of the IEEE ComSoc Asia/Pacific Outstanding Paper Award, the JSPS Invitation Fellowship, the RS Newton Advanced Fellowships, and multiple best paper awards. He was a member of Fellow Evaluation Committee and an Distinguished Lecturer of IEEE VTS, a Fellow of IEEE and a Fellow of CAA. His research interests include industrial IoT, networked control, cyber security.

AI and Multi-Agent Systems for Industry

Thursday, August 13th, 2026 - 09:10-09:55 - Letter Hall (信合厅) (3rd Floor)

This report focuses on the intelligent upgrading of the full lifecycle of industrial manufacturing, systematically exploring the application pathways and practical implementation of large models and multi-agent technologies in industrial scenarios. It will first outline the core challenges manufacturing enterprises face in intelligent transformation, analyzing common pain points such as data silos and reliance on manual experience in decision-making. Building on this, the report will examine three key directions: visual defect detection, abnormal behavior recognition, and multi-agent decision-making for complex business scenarios. Drawing on real industrial cases such as cocoon sorting, process inspection on automotive assembly lines, casting inspection, and intelligent production scheduling, it will provide an in-depth introduction to the design approaches and practical outcomes of these technologies. The lecture will also discuss how to build an industrial multi-agents to connect data and decision-making chains across production and operations, helping manufacturing enterprises transition from traditional production models to intelligent management model.

Fei Tao



Dr. Fei Tao is a Professor at the School of Automation Science and Electrical Engineering and the Dean of the International Institute for Interdisciplinary and Frontiers at Beihang University, Beijing, China. His research focuses on smart manufacturing and digital twins. He has served as PI for over 30 national research and industry projects. He has published seven books and over 100 peer-reviewed journal articles as the first/corresponding author in *Nature*, *CIRP Annals*, and *IEEE/ASME Transactions*, with over 40 of them being ESI highly cited papers. His publications have over 60,000 citations. He was elected as the Global Highly Cited Researcher (2019-2025) and one of the 20 Most Influential Academics in Smart Manufacturing

by SME in 2021. He is currently the Associate Editor of *Robotics and Computer-Integrated Manufacturing (RCIM)*, *CIRP* Associate Member and *IEEE* Senior Member. He is the founding Editor-in-Chief of *Digital Twin* in Taylor & Francis Group and *Digital Engineering* in Elsevier; and he also initiated the Digital Twin Global Forum (DTGF) and the Digital Twin International Conferences (DigiTwin).

Digital Twin: From Theory to Practice

Thursday, August 13th, 2026 - 9:55-10:40 - Letter Hall (信合厅) (3rd Floor)

Digital twin, a crucial technology for integrating physical and virtual spaces, has gained significant attention from both academia and industry over the past few years. To further broaden the applications of digital twin, this talk will introduce a series of related works we have conducted. First, the five-dimensional digital twin model is presented, encapsulating five key dimensions: physical entity, digital twin model, digital twin data, service, and their connections. Second, based on this model, a series of theoretical methods (including theories of digital twin modelling, digital twin data, digital twin connection and interaction), along with enabling technologies, essential tools, and standard systems for digital twin, are discussed. Third, two international journals (*Digital Twin* and *Digital Engineering*) and one international conference (*Digital Twin International Conference*) have been initiated to promote global collaboration in this field. Moreover, a digital twin software platform, named makeTwin, has been developed to address the lack of related software and platforms for practical applications. Finally, several industrial applications enabled by makeTwin will be briefly presented, particularly in smart manufacturing, aerospace, textile logistics, city management, and other sectors.

Andrea D'Ariano



Andrea D'Ariano received the B.S. and M.S. degrees in Computer Science, Automation and Management Engineering at Roma Tre University. In November 2003, he joined TRAIL Research School and Department of Transport and Planning, Faculty of Civil Engineering and Geosciences, Delft University of Technology. In April 2008, he successfully concluded his Ph.D. studies under the supervision of Prof. Ingo A. Hansen. In 2018 and 2022, he got the Full Professor Italian Scientific Habilitation in Operations Research and Transportation Science.

He served as Expert and Rapporteur for European Commission and numerous national research foundations. Currently, he is working as Full Professor at Department of Civil, Computer Science and Aeronautical Technologies Engineering, Roma Tre University. He is the former coordinator of the AIRO (Italian Association of Operations Research) Chapter on "Optimization in Public Transport and Shared Mobility". He is Associate Editor of well-known international journals (e.g., Transportation Research Part B, C, E) and conferences (e.g., IEEE Int. Conf. on Intelligent Transportation Systems). His main research interest is the development of novel scheduling and routing methods with application to public transportation and logistics.

Aircraft Timing, Sequencing and Routing Optimization in Terminal Control Areas During Disturbances

Thursday, August 13th, 2026 - 10:40-11:25 - Letter Hall (信合厅) (3rd Floor)

Intelligent decision support tools for aircraft monitoring and control are required in a busy Terminal Control Area (TCA). The problem of effectively managing TCA operations is particularly challenging, since there is a significant growth of traffic demand and the TCAs are becoming a bottleneck of the air traffic control system. The resulting increase in airport congestion, economic and environmental penalties can be measured in terms of performance indicators related to take-off and landing operations, e.g., aircraft delays, travel times and fuel consumption.

This talk addresses the real-time aircraft routing and scheduling problem at congested TCAs by optimizing the above-mentioned performance indicators. The mathematical formulation of this problem requires to consider the following key aspects: the aircraft trajectory and routing should be accurately predicted and optimized, the safety rules between consecutive aircraft need to be precisely modelled in each air/ground TCA resource, the aircraft timing and ordering decisions have to be taken in a short time. We discuss solving methods to integrate these modelling features and performance indicators. The proposed framework computes an initial trajectory for each aircraft, proposes a feasible aircraft schedule with pre-defined routes, and improves this schedule by rerouting some aircraft in the TCA. Computational experiments are performed on mixed-mode runway instances from Roma Fiumicino and Milano Malpensa. The disturbed traffic situations are generated by simulating multiple delayed aircraft and temporarily disrupted runways. The optimization-based approaches improve the solutions significantly compared to practical scheduling rules. However, trade-offs emerge in picking the right approach and paradigms for practical implementation.

Parallel Session Overview

13:30-17:05, Thursday, August 13th

Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 1A - SS1: Intelligent Methods in System Modeling, Scheduling and Design Chairs: Bo Huang, Xiaoyu Lu Time: 13:30-15:00	Session 1B - Data-Driven Production Intelligence, Reliability, and Robotic Coordination Chairs: Kaizhou Gao, Hailiang Zhao Time: 13:30-15:00	Session 1C - Intelligent Biomanufacturing, Molecular Modeling, and Visual Analytics Chairs: Shangce Gao, Jianchao Luo Time: 13:30-15:00
Coffee Break		
Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 2A - Best Student Paper Competition Chairs: Weimin Wu, Fajun Yang Time: 15:20-17:05	Session 2B - SS2: Supervision, Analysis, and Management of Transportation Systems with Artificial Intelligence Chairs: Liang Qi, Hanqiu Bao Time: 15:20-17:05	Session 2C - SS3: AI-Driven Scheduling, Logistics Optimization, and Control in Complex Systems Chairs: Ziyan Zhao, Junjie Liao Time: 15:20-17:05

8:30-11:50, Friday, August 14th

Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 3A - SS4: Towards Industry 6.0: AI-Driven Operation and Optimized Scheduling for Industrial Manufacturing Chairs: Xingquan Zuo, Yaqiong Lv Time: 8:30-10:00	Session 3B - SS5: Artificial Intelligence-Driven Scheduling for Manufacturing, Transportation and Logistics Chair: Yaping Fu Xiaopeng Guo Time: 8:30-10:00	Session 3C - SS6: Towards Intelligent and Adaptive Human-Robot Interaction: Motion Planning, Sensing and Control Innovations Chairs: Daojin Yao Huixia Liu Time: 8:30-10:00
Coffee Break		
Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 4A - Intelligent Scheduling and Routing for Complex Operational Systems Chairs: Hua Han, Haoyue Liu Time: 10:20-11:50	Session 4B - Online 1: Intelligent Planning, Sensing and Control Chair: Peng Wu Time: 10:20-11:50	Session 4C - Online 2: Mobility Analytics and Adaptive Operations Chair: Shoufei Han Time: 10:20-11:50

13:30-17:05, Friday, August 14th

Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 5A - SS7: AI-Driven Systems for Next-Generation Industrial Automation	Session 5B - Online 3: AI Decision and Detection	Session 5C - Online 4: Transport, Robotics and Spatial Intelligence
Chairs: Mingcheng Zuo, Ziyuan Zhou	Chair: Li Huang	Chair: Zhen Shen
Time: 13:30-15:00	Time: 13:30-15:00	Time: 13:30-15:00

Coffee Break

Letter Hall (信合厅) (3 rd floor)	Jinxin Hall (锦心厅) (3 rd floor)	To The Far Hall (致远厅) (3 rd floor)
Session 6A - Maritime Mobility Analytics and Integrated Logistics Planning	Session 6B - Online 5: Operational Intelligence and Autonomous Coordination	Session 6C - Online 6: Learning, Automation and Spatial Systems
Chairs: Yangming Zhou, Wenli Duo	Chair: Chengran Lin	Chair: Yan Qiao
Time: 15:20-17:05	Time: 15:20-17:05	Time: 15:20-17:05

Oral Presentation

Session 1A - SS1: Intelligent Methods in System Modeling, Scheduling and Design Thursday, Aug. 13 th , Chairs: Bo Huang, Xiaoyu Lu, Room: Letter Hall (信合厅) (3 rd Floor)			
Time	Author	Title	ID
13:30	Yi Xue, Jiazhong Zhou, Shuo Wang and Jiliang Luo	A Bidirectional Heuristic Search Method for Flexible Manufacturing Systems Scheduling Based on Petri Nets	17967
13:45	Chunying Lu and Peng Wu	An Integrated Watchtower – Drone – Truck Patrol System for Forest Fire Detection	18250
14:00	Qianyi Zhang, Zhuojia Tang, Yugang Liu, Shuai Zheng, Liying Tang and Andrea D'Ariano	Routing Optimization for Drone Delivery with Bus-Assisted En-Route Charging	18258
14:15	Shuai Zheng, Lang Chen, Yugang Liu, Jiaxin Xiang, Qianyi Zhang and Andrea D'Ariano	Collaborative Scheduling of Flexible Buses and Intelligent Delivery Robots for Community Passenger-Freight Integration	18257
14:30	ChengRan Lin, JunWei Xue, Hao Shi and XiaoLin Zhang	Dual-Space Multi-Agent Reinforcement Learning for Energy-Efficient Task Scheduling	18265
14:45	Yuxuan Dong, Binjie Liu and Yangming Zhou	Deep Reinforcement Learning for Integrated Machine-AGV Scheduling in Flexible Job Shops with Finite Buffers	18034

Session 1B - Data-Driven Production Intelligence, Reliability, and Robotic Coordination Thursday, Aug. 13 th , Chairs: Kaizhou Gao, Hailiang Zhao, Room: Jinxin Hall (锦心厅) (3rd floor)			
Time	Author	Title	ID
13:30	Jufeng Wang, MengChu Zhou	Virtual Cell-Based Scheduling Method for Wafer-Residency-Time-Constrained Single-Arm Cluster Tools with Wafer Processing Priority	18313
13:45	Yu Liu, Yaqiong Lv, Yu Liu, Xiaohu Zhang and Nanyue Xiong	Frequency-Band Decoupled Cyclic Network and LLM-Assisted Decision Making for Rolling Bearing Fault Diagnosis	17716
14:00	Zhizhao Gong, Yifei Li and Chunrong Pan	Intelligent Magnetite Detection via Feature-Level Fusion of Magnetic and Visible Images	17966
14:15	Kai Wang, Kangping Du, Xudong Shi, HanQiu Bao and Weili Xiong	Locality-Preserving Flow Matching-Based Imputation for Industrial Missing Data Estimation	18240
14:30	Jing Lu and Peng Wu	A Two-Stage Robust Framework for Single-Machine Scheduling with Time-of-Use Electricity Prices and Uncertain Release Dates	18272
14:45	Qingshun Kong and Lu Qian	A Study on Maintenance Decision-Making Based on CBAM-TCN-LSTM and Markov Decision Processes	18278

Session 1C - Intelligent Biomanufacturing, Molecular Modeling, and Visual AnalyticsThursday, Aug. 13th, Chairs: Shangce Gao, Jianchao Luo, Room: To The Far Hall (致远厅) (3rd Floor)

Time	Author	Title	ID
13:30	Yifan Qian, Kefan Ni, Jiakai Zhang, Zihang Zhang and Shangce Gao	RSMG-Net: A Residual Structure-Aware Molecular Graph Network for Molecular Property Prediction	18141
13:45	Hang Yu, Jiayi Li, Zhe Xu, Zihang Zhang, Zhenyu Lei and Shangce Gao	FP-DNMNet: Dendritic Multimodal Fusion for Molecular Classification	17949
14:00	Qinlin Wu, Xiangyu Wang, Shibo Dong, Zhenyu Lei and Shangce Gao	DNM-UNet: A Dendritic Neuron Model-Enhanced U-Net for OCTA Vessel Segmentation	18204
14:15	Shuaiyu Yao, Yinghui Jiang, Minhao Wang and Wendi Ouyang	VERA-AMP: Closed-Loop AI Control for Safe Peptide Candidate Generation in Automated Biomanufacturing Workflows (Online)	18227
14:30	YuQian Qian, YuXin Qi and YaPing Fu	Multi-Objective Home Health Care Routing and Scheduling With Lunch Breaks and Skill Matching	18267
14:45	Huan Yang, Fajun Yang, Xiang Xu and Chao Li	A Hybrid Q-Learning and Ant Colony Framework for Multi-Skill Home Health Care Routing and Scheduling	17961

Session 2A - Best Student Paper CompetitionThursday, Aug. 13th, Chairs: Weimin Wu, Fajun Yang, Room: Letter Hall (信合厅) (3rd floor)

Time	Author	Title	ID
15:20	Jiayi Wang, Hua Han and Yiping Chen	STDA: Shape-Texture Decoupled Black-Box Adversarial Patch Attack for Cross-Modal UAV Vehicle Detection	18069
15:35	Jinrong Lei and Peng Wu	Integrated Continuous Berth Allocation, Quay Crane Assignment, and Shore Power Scheduling Under Time-of-Use Pricing	18264
15:50	Shengchao Li, Zhiang Liu, Ziyang Zhao and Shixin Liu	An Arc-Flow-Based Exact Parallel-Batch Scheduling Method for Unrelated Parallel Machines with Serial Setup Time	18174
16:05	Ke Xiao, Xiaoyu Sean Lu, Siya Yao and Yuda Wang	RSCAD: Relational and Structural Consistency for Adversarial Distillation	18386
16:20	Shengchao Zhou, Hanqiu Bao, Feng Qian, Wang Liu, Xudong Shi, Yiyang Wang, Guzila Azhati and Na Fu	Diffusion-MPPI-based Motion Planning for Safe End-to-End Autonomous Driving	18317
16:35	Shoulin Huang, Guanfu Wu and Xiaohao Wen	A Manifold Differential Evolution Method for Low-Overlap Facial Point Cloud Registration	18281
16:50	Junyu Shang, Yinglong Fu, Zheng Fan and Qi Kang	Static Multi-plan Scheduling for Cold Rolling via Candidate Pool Generation and Variable Neighborhood Repair	18311

Session 2B - SS2: Supervision, Analysis, and Management of Transportation Systems with Artificial Intelligence

Thursday, Aug. 13th, Chairs: Liang Qi, Hanqiu Bao, Room: Jinxin Hall (锦心厅) (3rd floor)

Time	Author	Title	ID
15:20	Zhaohui Wang, Liang Qi, Wenjing Luan, Yangming Zhou, Ruiping Yang and Kun Liu	CAV Platoon Formation in Mixed Traffic under HDV Uncertainty	18263
15:35	Mingyu Shao and Li Huang	A Mixed-Space Collaborative Evolutionary Algorithm for Large-Scale Multi-Objective Optimization and Its Application in UAV Path Planning	17942
15:50	Yangming Zhou, Bo Xue, Yuxuan Dong and Lei Wang	Solving the Workload-Balanced Colored Traveling Salesman Problem via a Hybrid Evolutionary Algorithm	18074
16:05	Zhiyu Zhang and Shouguang Wang	Curriculum Edge Masking for Graph Autoencoder-based Link Prediction	18400
16:20	Yuli Zhang, Jialin Liang, Yaozheng Kang, Zanzan Dai and Yuzhuo Zhang	Dynamic Coordinated Scheduling for Truck-Drone Delivery based on Reinforcement Learning	18312
16:35	Jinbo Li, Sen Feng, Lei Cai, Qin Wang, Xinyu Huang and Miaokun Xu	Flexible and Resilient Collaborative Scheduling of Drones and Vehicles under Uncertainty for Emergency Logistics	18202

Session 2C - SS3: AI-Driven Scheduling, Logistics Optimization, and Control in Complex Systems

Thursday, Aug. 13th, Chairs: Ziyang Zhao, Junjie Liao, Room: To The Far Hall (致远厅) (3rd floor)

Time	Author	Title	ID
15:20	Xuan Zhang, Hongyao Ma, Junqi Zhang, Jiahui Zhai, Haitao Yuan and Jia Zhang	Milling Tool Anomaly Detection with Multimodal Fusion in 3C Manufacturing	18248
15:35	Jianyu Zhang, Hongyao Ma, Haoxiang Cong, Wenhui Xu, Junqi Zhang, Juan Zhang, Zili Zhang, Jiahui Zhai and Jing Bi	WADNet: A Spatiotemporal Fusion Framework for Multimodal Water Quality Anomaly Detection	18268
15:50	Jianyu Zhang, Lijun He, Wenfeng Li, Wentao Sheng, Cong Gao and Yinlong Zhang	Safe and Scalable Multi-AGV Navigation in Intermodal Ports via Physics-Aware Graph Critics	17953
16:05	Jinda Zhang, Shoufei Han and Xiaojing Liu	A Two-Stage ALNS for Truck-Drone Collaborative Delivery with Soft Time Windows	18079
16:20	Jinbo Li, Miaokun Xu, Mingzhuang Hua, Yupeng Wang, Qin Wang and Lei Cai	A BiLSTM-MHA Based Joint Prediction Method for SOC and SOE of Low-Altitude UAV Batteries	18138
16:35	Honglin Zhang, Jing Chen, Xinran Hou, Jianling Chen, Ying Zhao and Yanyan Wang	Region-Based Event-Triggered Coordination for Communication-Constrained Warehouse AMR Systems	17537

Session 3A - SS4: Towards Industry 6.0: AI-Driven Operation and Optimized Scheduling for Industrial Manufacturing

Friday, Aug. 14th, Chairs: Xingquan Zuo, Yaqiong Lv, Room: Letter Hall (信合厅) (3rd floor)

Time	Author	Title	ID
8:30	Keyu Zhou, Yixuan Chen, Yiwei Zhu, Zhangyi Shen and Xueting Zhang	SCMamba-YOLO: Low-Latency and Edge-Guided Mamba Framework for Submarine Cable Detection	17970
8:45	Ruizai Yu, Zhen Shen, Gang Xiong, Xisong Dong, Shichao Chen and Sheng Liu	An AI-Agent Collaborative Method for Discrete Manufacturing Automation	18266
9:00	Nairu Diao, Zhen Shen, Xisong Dong and Gang Xiong	A KAG-Guided Multi-Agent Collaborative Decision Framework for Industrial Predictive Maintenance	18298
9:15	Guangyu Qian, Mingcheng Zuo and Yong Zhang	Dynamic Auxiliary Task-Based Multi-Objective Evolutionary Algorithm for Coal Mine Integrated Energy System Dispatch Problem	17946
9:30	Changfang Guo, Yuexi Liu, Dongdong Wu, Runping Dong, Lei Zhou and Zongpeng Liu	Research on Intelligent Early Warning Method for Coal and Gas Outburst Integrating Prior Knowledge and Deep Transfer Learning	18234
9:45	Yuhang Zhang, Jiehan Zhou, Mingfeng Yuan, Zhongxu Hu and Hu Zhang	VLA-Based Industrial Agent: Architecture, Application, and Challenges	18277

Session 3B - SS5: Artificial Intelligence-Driven Scheduling for Manufacturing, Transportation and Logistics

Friday, Aug. 14th, Chairs: Yaping Fu, Xiaopeng Guo, Room: Jinxin Hall (锦心厅) (3rd floor)

Time	Author	Title	ID
8:30	Shirui Wang, Kaizhou Gao, Qi Jia, Ren Wang and Yaping Fu	Improved Meta-heuristics With Novel Reinforcement Learning Mechanism for Solving Prefabricated Garage Construction Project Scheduling Problems	17904
8:45	Shihan Lv and Ziyang Zhao	DRL-Based Multi-Objective Optimizer Enhanced by Tri-Level Heuristic Initialization for Fuzzy Distributed Flexible Job Shop Scheduling	18261
9:00	Yushuang Hou and Hongfeng Wang	Integrated Optimization of Packing and Scheduling Via a Deep Reinforcement Learning-Assisted Evolutionary Algorithm	18210
9:15	MingBang Wang, ChengRan Lin and XiaoLin Zhang	Conditioned Diffusion-Embedded Evolutionary Algorithm for Extended Flexible Job-Shop Scheduling	18232
9:30	Yifeng Wang, Xujin Pu and Yingzhu Chen	A Reinforcement Learning-Based Cooperative Co-Evolutionary Algorithm for Two-Stage Fresh-Cut Vegetable Batch Scheduling	18259
9:45	Xingkai Ye and Peng Wu	On-Demand Food Delivery with Drones under Time-Varying Wind Conditions	18256

Session 3C - SS6: Towards Intelligent and Adaptive Human-Robot Interaction: Motion Planning, Sensing and Control Innovations

Friday, Aug. 14th, Chairs: Daojin Yao, Huixia Liu, Room: To The Far Hall (致远厅) (3rd floor)

Time	Author	Title	ID
8:30	Ziqi Wang and Hailiang Zhao	From Pipelines to Multi-Agent Systems: Rethinking Orchestration and Safety	18004
8:45	Wentao Dong, Tao Peng, Lei Zhu, Yangyi Peng and Daojin Yao	Flexible Thermo-Piezoelectric Sensor for Structural Health Monitoring in High-Speed Train Pantograph	17709
9:00	Yingjie Zhou, Chiyang Wan, Yuhang Ren, Zhuochao Chen, Wentao Dong and Daojin Yao	Research on Traffic Intersection Object Detection Based on FAS-RTMDet	18043
9:15	Daojin Yao, Lifa He, Shaobo Yan, Xu Zhang, Wanqiu Ye and Yuzhen Xiao	PCB Board Defect Detection and Sorting System Based on Deep Learning Algorithm	17964
9:30	Chunmei Lai, Huaping Huang, Enxi Le, Can Liu and Guohua Deng	International Competitive Dynamics of Humanoid Robots: A Patent-Based Analysis	18302
9:45	Jiaxin Chen and Peng Wu	A Distributionally Robust Lane Reservation Model with Predetermined Task Combinations Under Uncertain Road Conditions	18299

Session 4A - Intelligent Scheduling and Routing for Complex Operational Systems

Friday, Aug. 14th, Chairs: Hua Han, Haoyue Liu, Room: Letter Hall (信合厅) (3rd floor)

Time	Author	Title	ID
10:20	Linghan Hu, Qiuyu Bao and YaPing Fu	Multi-Objective Scheduling for Distributed Flow Shops With Electricity Supply by Power Grid and Storage Battery Under Time-of-Use Tariffs	18255
10:35	Sida Zhang, Yong Zhou and Yanghui Wang	A Deep Reinforcement Learning Method with a Co-evolutionary Mechanism for Collaborative Scheduling of Multiple Rail-Mounted Gantry Cranes	18245
10:50	Aiyi Sun, Liyi Sun, Shuyi Xie, Chang Liu, Jiaqing Chen and Shuqi Guan	A Hybrid Genetic Algorithm for Dynamic Vehicle Routing of Hydrogen Heavy-Duty Trucks	18289
11:05	Mingyang Chen, MengChu Zhou and Zihao Wang	Enhancing Genetic Algorithm with Key-Genetic-Positions-Based Mutation for Large-Scale Multi-objective Multi-Robot Planning	18236
11:20	Ying Duan, Zheng Li, Lijun He, Mingyang Li, Shengbo Tian and Luyi Shi	A Hybrid Discrete Grey Wolf Optimizer with Variable Neighborhood Descent for Flexible Job Shop Scheduling Problem	17931
11:35	Yangjun Sun, Mingyue Zhang and Ning Zhao	Conflict-Free Intelligent Scheduling Approach for Optimizing Fleet Efficiency in Four-Way Shuttle Warehouses	18208

Session 4B - Online 1: Intelligent Planning, Sensing and ControlFriday, Aug. 14th, Chair: Peng Wu, Room: Jinxin Hall (锦心厅) (3rd Floor)

Time	Author	Title	ID
10:20	Wentao Sheng, Lijun He, Jianyu Zhang, Wenfeng Li and Cong Gao	Conflict resolution strategy for collaborative operations of manned and unmanned vehicles in automated container terminals based on hybrid deep reinforcement learning	17929
10:35	Congming Wu, Tangqing Chen, Jianyu Zhang and Wentao Sheng	A Video Stabilization Method Based on the Fusion of Image and Feature Layers	17985
10:50	Yiyang Chen, Chen Yu and Jing Wu	Adaptive Path Planning Method Based on Global Optimization and Enhanced Memory Learning	18244
11:05	Kaizhuo Zhu, Yuxuan Bai, Xiaoxian Liu, Zhijie Liu and Yan Yang	Adaptive Curriculum and Goal-Oriented Counterfactual Reinforcement Learning for Signal Temporal Logic Tasks	18223
11:20	Ying Zhang, Donghao Zhang, Zhiji Han and Hongdu Wang	Point-Wise Output Feedback Shape Control of a Nonuniform Continuum Arm	18143
11:35	Yuxuan Bai, Xiaoxian Liu, Jiatao Cui, Kaizhuo Zhu, Xiangyu Liu, Yu Zheng and Yan Yang	A Cooperative Planning and Tracking Scheme for Multi-Agent Systems under Signal Temporal Logic Constraints	18195

Session 4C - Online 2: Mobility Analytics and Adaptive OperationsFriday, Aug. 14th, Chair: Shoufei Han, Room: To The Far Hall (致远厅) (3rd Floor)

Time	Author	Title	ID
10:20	Shuo Ma, Qiang Su, Ying Li and Fuxin Zhang	Beacon Rate Adaption in Vehicular Networks Based on Multi-Agent Deep Reinforcement Learning	18241
10:35	Yanyu Jiang, Guojian Zou and Cheng Fu	A Domain-Adaptive Graph Spatio-Temporal Mamba Framework for Traffic Accident Risk Prediction	17956
10:50	Wenjun Chen, Qichao Mao, Cuicui Yang, Cong Liu, Fengqi Yan and Jiujun Cheng	Weak-Evidence-Guided Collaborative Proposal Enhancement for Single-Frame BEV 3D Object Detection	18247
11:05	Yulian Cao, Yiran Wang, Haocheng Zhang, Yufeng Zhuang, Xinchao Zhao and Xingquan Zuo	Electric Vehicle Routing Problem with Joint Charging and Battery Swapping under Soft Time Windows: A Reinforcement Learning-Assisted Hybrid Memetic Algorithm	18284
11:20	Tianbin Jiang, Jiahui Shen, Xiaojuan Yin, Bo Xu and Huixia Liu	Rescheduling of Flexible Manufacturing Systems Based on Petri Nets and an Improved Proximal Policy Optimization Algorithm	18303
11:35	Kang Hu, Wen Feng Li and Zhao Xiong Zeng	Hierarchical Robust Trajectory Tracking and Asymmetric Parking for Heavy-Duty Port AGVs	18017

Session 5A - SS7: AI-Driven Systems for Next-Generation Industrial AutomationFriday, Aug. 14th, Chairs: Mingcheng Zuo, Ziyuan Zhou, Room: Letter Hall (信合厅) (3rd floor)

Time	Author	Title	ID
13:30	Yanbo Yu, Long Zhang, Jinhong Lu, Rong He, Han Liao, Mingcheng Zuo and Xingzhe Zhao	Physics-Guided Spatio-Temporal Graph Network for GNSS-Based Slope Displacement Prediction	17927
13:45	Chen Yang, Qi Deng, Ning Zhao and Jinhao Du	A Two-Stage Load-Balancing Heuristic and Genetic Algorithm for Tobacco Sorting Line Scheduling	18197
14:00	Chengjie Chen, Han Mo, Ruihua Ouyang, Kaibo Zhou and Siya Yao	A Multi-Scale Feature Extraction and Two-Stage Self-Training Method for Cross-Condition Bearing Fault Diagnosis	18338
14:15	Xiufeng Yan, Tao Liu, Long Liu, Yijie Ding and Xuanhong Deng	A Decoupled Claim-Evidence Verification Framework for Technical Intelligence Generation (Online)	18168
14:30	Xiufeng Yan, Tao Liu, Long Liu, Yijie Ding and Xuanhong Deng	Hot-Point Detection via Emerging Structural Signals in Embedding Space (Online)	18206
14:45	Jinshan Dai, Liting Zhang and Mingqiong Pu	Measuring Port–City Economic Efficiency Using a Two-Stage Network DEA Model: Evidence from Coastal Cities in China (Online)	17998

Session 5B - Online 3: AI Decision and DetectionFriday, Aug. 14th, Chair: Li Huang, Room: Jinxin Hall (锦心厅) (3rd Floor)

Time	Author	Title	ID
13:30	Xin Li, Wenfeng Li, Sheng Yuan and Tao Fang	Location Selection Analysis of Fresh Cold Chain Distribution Center in Yuyao City Based on GIS and AHP	17990
13:45	Jie Wang, Wen-Tao Han, Yong-Hui Wu, Jia-Yi Li, Xin-Hao Tang and Peng Sun	Elevator Dispatching Problem for Construction of Super High-Rise Buildings	18274
14:00	Haocheng Zhang, Yulian Cao, Yiran Wang, Yufeng Zhuang, Xinchao Zhao and Xingquan Zuo	An End-to-End Deep Reinforcement Learning Approach for the Traveling Salesman Problem with Multiple Drones	18292
14:15	Yinqin Li, Xiwang Guo, Bin Hu and Qi Kang	Cell-Contextualized ChemBERTa: Predicting Single-Cell Perturbation Responses Using Pretrained Chemical Language Models	18403
14:30	Yijie Mao, Wenhua Han, Yongquan Wang, Zhipeng Liu, Zhuangzhuang Jia and Yunzhou Qiu	An Improved YOLOv13n Algorithm for Insulator Defect Detection	17947
14:45	Zhipeng Liu, Wenhua Han, Yongquan Wang, Zhuangzhuang Jia, Yijie Mao and Yunzhou Qiu	An Improved YOLOv13n Algorithm for Wind Turbine Blade Surface Defect Detection	17945

Session 5C - Online 4: Transport, Robotics and Spatial IntelligenceFriday, Aug. 14th, Chair: Zhen Shen, Room: To The Far Hall (致远厅) (3rd Floor)

Time	Author	Title	ID
13:30	Yueli Wu, Hua Zhou, Zhengguo Wang, Ying Zhang and Siyi Chen	Optimization of Steel Multimodal Transport Network for Canal–Seaport Port Cluster under Environmental Uncertainties	18271
13:45	Junhao Wang, Quanke Pan, Fajun Yang, Haizhu Bao and Qingda Chen	Dedicated-Depot Multi-Robot Spraying Task Allocation in Smart Orchards Using DDMOTLBO	17991
14:00	Jiayuan Zhu and Chunfeng Liu	Self-Learning Biogeography-Based Optimization for Integrated Layout and Scheduling in Flexible Manufacturing with Humanoid Robots and Dynamic Robot Type Switching	18211
14:15	Yiping Chen, Hua Zhou and Ying Zhang	Multi-objective multimodal route optimization considering time windows and schedule constraints	18273
14:30	Zhou Jiang, Yufeng Zhuang, Yulian Cao and Zi Wang	Public Transit and Drones Transshipment Delivery in Rural Passenger-Freight-Post Integration	18282
14:45	Shu Yan, Jie Zhang and Junliang Wang	Semantic-Prior-Guided Curvature-Adaptive Registration Method for Noisy Point Clouds	17901

Session 6A - Maritime Mobility Analytics and Integrated Logistics PlanningFriday, Aug. 14th, Chairs: Yangming Zhou, Wenli Duo, Room: Letter Hall (信合厅) (3rd floor)

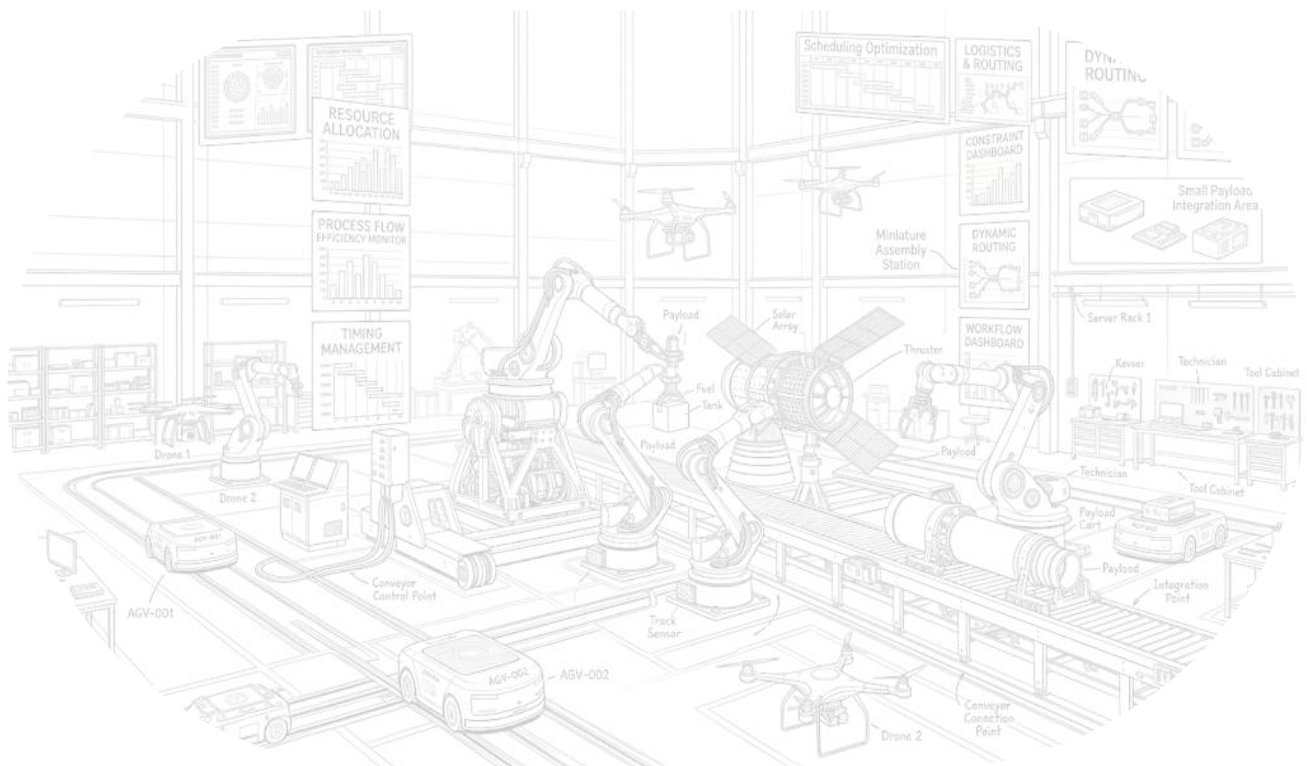
Time	Author	Title	ID
15:20	Zhongyuan Liu, Yaqiong Lv and Mingkai Zou	Dual-Phase Reactive Strategies for Berth and Quay Crane Assignment under Arrival Uncertainties	17724
15:35	Mengru Wang, Jinshan Dai and Qian Huang	Vessel Trajectory Classification Method Based on Multi-dimensional Feature Enhancement and Improved XGBoost	17969
15:50	Rui Li, Yaqiong Lv, Mingkai Zou and Jialun Liu	Multi-Agent Simulation-Based Analysis of Tugboat Fleet Sizing in Port Operation	18148
16:05	Peng Wu, Hongye Lin, Xuan Wu and Jingjing Pan	Hub Port Location and Shipping Network Optimization Considering Port Node Connectivity under RCEP	18269
16:20	Wenjing Guo, Yue Wang, Mingdong Yan, Qianneng Zhang and Chengqing Yuan	Integrated Scheduling in Sea-Rail Intermodal Terminals Considering Flexible Transshipment Routes and Double-Stack Containers	18301
16:35	Liangtong Luo, Zixuan Tian, Guoshun Liu and Huarong Zheng	Collaborative Exploration of Unknown Underwater Environments with Deep Reinforcement Learning	18089

Session 6B - Online 5: Operational Intelligence and Autonomous CoordinationFriday, Aug. 14th, Chair: Chengran Lin, Room: Jinxin Hall (锦心厅) (3rd Floor)

Time	Author	Title	ID
15:20	Zhenyu Li and Qi Kang	A Dual-Stage Feasibility-Guided Evolutionary Algorithm for Online Multi-Objective Setpoint Optimization of Wastewater Treatment Process	18283
15:35	Junqi Zhang, Minghao Zhan, Wenxi Wang and Mengchu Zhou	Multi-Robot Inspection Path Planning in Data-Transmission-Restricted Environments	17955
15:50	Zi Wang, Yufeng Zhuang, Yulian Cao and Zhou Jiang	Improved Variable Neighborhood Search for Capacitated UAV Routing in E-Commerce Last-Mile Delivery	18275
16:05	Yahua Dong, Wenfeng Li and Lijun He	Resource-Aware Multi-AGV Cooperative Routing in Automated Container Terminals via Multi-Agent Reinforcement Learning	18262
16:20	Yanze Zhang, Wenhao Lin, Lei Du, Fan Zhang, Yuqi Wan and Qingyan Li	Vessel Traffic Flow Forecasting in Port Cluster Waters Based on ST-Camba	18061
16:35	Ying He, Jin Tao, Defu Jiang and Shi Wang	A Parallel PHD Filtering-Based Algorithm for Radar Multi-Target Tracking	17997
16:50	Nuopiao He, Quanyu Zhang, Yunhan Lin, Qihua Tang, Kai Zhang and Zhiwei Xu	A Dual-Agent DDQN-Based Dynamic Scheduling for Hybrid Flow Shops with Random Order Arrivals	18315

Session 6C - Online 6: Learning, Automation and Spatial SystemsFriday, Aug. 14th, Chair: Yan Qiao, Room: To The Far Hall (致远厅) (3rd Floor)

Time	Author	Title	ID
15:20	Shanwei Wang, Qitao Zhong, Quanwang Wu and MengChu Zhou	Compact Causal Feature Selection for High-Dimensional Multi-label Learning	18260
15:35	Jia Shi, Xinhong Xiong, Chundong Zhu, Yuxiong Hao, Guoxian Wang and Jun Wang	Dynamic Characterization of a Turret CNC Machine Tool Using Multi-Point FRFs and CMIF	18249
15:50	Zhanbo Mao, Guanjun Liu, Qinghao Huang and Ziyuan Zhou	Two-Stage Reinforcement Learning for UAV Landing on a Moving Platform	18254
16:05	DingYe Zheng, ChengLang Rong and QingHua Zhu	A Reinforcement Learning Approach for Scheduling a Multicluster Tool with Non-Identical Parallel Modules and Cleaning	18280
16:20	Dongsheng Qu, Jianbin Xin, Yihui Wang	Locating Battery Swapping Stations for Electric Mining Trucks in Open-Pit Mines Using Mixed-Integer Linear Programming	18147
16:35	Chenchen Tang, Zhi Ren and Ming Zhong	A spatial intelligence framework for coordinated transport-land development: modeling, interpretation, and decision support in high-density urban areas	18191
16:50	Weifeng Zou and Chengyu Deng	Visibility Aware Projection and Hybrid Mamba-Transformer for Point Cloud Classification	18198



FOR MORE INFORMATION:

- Conference Website

<https://www.icamal2026.com/>