IWACII2025

The 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics

Oct.28-Nov.4, 2025, Zhuhai & Beijing, China

PROGRAMME

Sponsors:

International Association for Computational Intelligence

Organizers:

北京理工大學(珠海) BEIJING INSTITUTE OF TECHNOLOGY, ZHUHAI

遠光軟件

Supporters:

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IEEE Computational Intelligence Society

IEEE Industrial Electronics Society

Technical Committee of Human Factors

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易星标

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Contents

Welcome to IWACIII 2025

The 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025) will be held from Oct. 28 to Nov. 4, 2025 in Zhuhai & Beijing, China. The pre-conference sessions will take place in Beijing from October 28 to 30 while the main conference will be held in Zhuhai from October 31 to November 4. On behalf of the organizing committee of IWACIII, we would like to express our warmest welcome to the all participants.

During the past years, supported by the researchers and scientists all over the world, IWACIII has been actively developing their domestic and international scientific and technical exchanges, which is influential and considerable especially in the Asia area.

IWACIII 2025 is sponsored by International Association for Computational Intelligence (IACI) and Beijing Association of Automation (BAA), and organized by Beijing Institute of Technology (Zhuhai), Beijing Institute of Technology and YGSOFT INC. Additionally, the conference is supported by Zhuhai Zhixin Automation Technology Co., Ltd., Zhuhai Yunzhou Intelligence Technology Ltd., xFusion Digital Technologies Co., Ltd., ELFLECT Technology Co.,Ltd. and so on. With the great support of many researchers and scholars, and Springer, the world-leading academic publisher, IWACIII 2025 continuously contributes to the development of advanced computational intelligence and information technology as well as their various applications. It has no suspicion that the exchanges about Computational Intelligence, Information Technology, and their applications are quite favorable not only for the Universities but also for the close relationship between Industry and Academy.

Dear Friends, IWACIII 2025 closely relies on your support, while the development of Computational Intelligence also ties up our participation. IWACIII 2025 is an important occasion that could give a general comment of the recent years' global science and technology, and we can also expect to see that IWACIII 2025 will indicate us the future development directions. May we join together to contribute more to develop Computational Intelligence, Information Technology and their applications, to advance both the theory and application for endeavor to create the brilliant future.

Thanks again for your attendance to IWACIII 2025.

From







Kaoru Hirota Honorary, Meiling Wang Chair, Liqun Han, Xiaoyan Zhao Organized, Takenori Obo Session, Kewei Chen Chairs, Fangyan Dong

and all other organizing committee members.

Greetings from General Chairs

Hongbin Ma

Shinichi Yoshida

Xingguang Duan

We would like to thank the honorary chair, Prof. Kaoru Hirota, Prof. Meiling Wang and Prof. Liqun Han, for their continuous great support of BITZH and BIT to organize the workshop. It is our great pleasure to welcome you to the 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025) which will be held from Oct. 28 to Nov. 4, 2025 in Zhuhai & Beijing, China.

The highlights of IWACIII 2025 include 9 keynotes by overseas top-notch researchers – Witold Pedrycz, Yasufumi Takama, Kazuhiko Kawamoto, Yang Shi and so on; 14 keynotes by Chinese top-notch researchers – Lei Guo, Shuxiang Guo, Liqun Han, Zengguang Hou, Xinzhu Sang, Shing-Chi Cheung, Yan Zhang, C. L. Philip Chen, Jianqing Li, Ching-Chih Tsai and so on; 42 groups of parallel sessions and an AI challenge contest. The conference covers more than 30 technical topics. More than 300 experts and scholars from home and abroad will jointly explore the cutting-edge directions of AI.

Apart from the technical programs, participants are also cordially invited to attend various social events, such as welcome reception, banquet, round table discussion, etc. As the workshop will be held at the beginning of November, the weather in the duration will be very nice and you can enjoy beautiful scenes of Zhuhai comfortably.

We sincerely thank all keynote speakers, the authors, reviewers, members of the organizing committee, and volunteers for your great support of IWACIII 2025. Wish every participant enjoy a lot from IWACIII 2025.

Greetings from Advisory Board

Fuchun Sun

Weidong Hu

Toshio Fukuda

Naoyuki Kubota

The great success of IWACIII has been witnessed by the previous eight times of successful holding. IWACIII provides a very good opportunity to exchange ideas among researchers and scholars who are dedicated to computational intelligence, intelligent informatics and their applications. They are getting more and more influential and considerable especially in the Asia area.

We believe that this time, the 9th IWACIII, with the great effort of the organizing committee and the contribution of all authors and presenters, would be an excellent occasion for exchanging academic ideas and developing and promoting friendships. Thank you for your contribution to IWACIII 2025. We hope that IWACIII 2025 would be a wonderful memory to you.

Greetings from Beijing Association of Automation

Qunxiong Zhu

Yuan Xu

On behalf of Beijing Association of Automation, we are pleased to organize the 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025) with Beijing Institute of Technology (Zhuhai) and Beijing Institute of Technology. We need to express our sincere welcome to all attendees of IWACIII2025 and we hope our collaboration can make you enjoy a pleasant trip to Zhuhai.

First of all, we would like to express our sincere gratitude to everyone who made contributions and various support to this workshop, especially the teams of BITZH and BIT who have done hard work which makes this great event possible. We would provide our continuous support with the growth of this event as well as the growth of our association.

As co-organizer of this great event, we would also like to thank all sponsors. Your support to this workshop adds the value of this workshop and help to promote this event as a platform for academic exchange.

Besides, we would also like to give our special thanks to Springer Press, which helps to improve the impact of our workshop. And sincere thanks to Fuji Technology Press for their continuous great support to our past conferences.

And we welcome the members of Beijing Association of Automation, for your attendance and continuous support to this workshop.

We hope that this workshop will be successful and fruitful with all your great efforts and time.

Thank you again for your cooperation and participation for IWACIII 2025.

Greetings from Program Committee Chairs

Bin Xin

Jinhua She

Wanhong Xiang

On behalf of the program committee of the 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025), we would like to express our gratitude to all those who submitted research papers and to volunteer reviewers who took on hard reviewing work for the workshop. Undoubtedly, their great efforts and contributions are critical for the success of the workshop.

We received numerous submissions from over 110 research institutions. Each submitted paper has been reviewed by at least two reviewers in terms of originality, importance, presentation, English usage, and overall quality. According to suggestions of Springer, the program committee has finally accepted 226 papers from 393 submissions. The Springer press will be in charge of later work of EI indexing. The technical program includes 42 sessions that cover a broad range of topics related to computational intelligence and intelligent informatics.

We hope that the workshop will provide a great opportunity for exchanging research activities and fostering research collaboration in the future.

Thank you again for your cooperation and participation for IWACIII 2025.

Greetings from Local Organizing Members


Yaping Dai


Yuan Li


Guiping Lu


Fengmiao Chen


Weidong Zou

On behalf of the local organizing members of the 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025), we would like to express our gratitude to all those who submitted research papers and to volunteer reviewers who took on hard reviewing work for the workshop. Undoubtedly, their great efforts and contributions are critical for the success of the workshop.

We hope that the workshop will provide a great opportunity for exchanging research activities and fostering research collaboration in the future.

Thank you again for your cooperation and participation for IWACIII 2025.

Organizing Committee

Honorary Chair

Kaoru Hirota (BIT, China)

Meiling Wang (BITZH, China)

Liqun Han (CSEDS, BTBU, China)

General Chairs

Hongbin Ma (BIT, China)

Shinichi Yoshida (KUT, Japan)

Xingguang Duan (CSEDS, BITZH, China)

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Yuan Li (BIT, China)

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Zhiyang Jia (BIT, China)

General Affairs

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Gao Wang (JNU, China)
Fengmiao Chen (BITZH, China)
Genjing Chang (CSEDS-AIRE, China)

Program Committee Members

(Alphabetical Order)

A Kecskemethy	AM Iliyasu	A Ralescu	A Shibata	Bin Xin	Bin Xu
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Dawei Shi	EF Fukushima	E Shimokawara	Elmer Dadios	Fangyan Dong	Fei Yan
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H Ishibuchi	H Iyatomi	H Masuta	H Nobuhara	H Ohtake	H Sakaniwa
H Seki	H Takahashi	Haitao Li	Hao Fang	Haobin Dong	Hongbin Ma
Hongsheng Qi	Hongtao Sun	Hua Yu	Hui Chen	I Koboyashi	I Ono
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T Hashimoto	T Obo	T Ohkubo	T Shibata	T Yamaguchi	T Yamanoi
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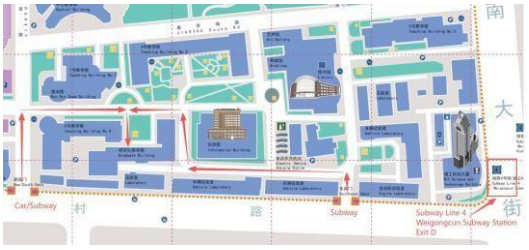
Zhengqiang Zhang	Zhentao Liu	Zhijia Zhao	Zhiqiang Zuo	Zhiwen Li	Zhiyang Jia
Zhuoyue Song					

Conference Venue

Dear IWACIII 2025 Participants:

First of all, thank you very much for your contribution to IWACIII 2025. For the convenience of some keynote speakers, IWACIII 2025 will be held in hybrid form, i.e. online (mainly by Zoom) and offline in Zhuhai and Beijing during Oct. 28-Nov. 4. The details are posted on the official website of this workshop (https://iwaciii.bit.edu.cn/) . Please pay close attention.

Xiangshan Conference Center in Zhuhai



Beijing Institute of Technology in Beijing

IWACIII 2025 Organizing Committee

Conference Introduction

The 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025) is sponsored by International Association for Computational Intelligence (IACI) and Beijing Association of Automation (BAA), and organized by Beijing Institute of Technology (Zhuhai) and YGSOFT INC.

This international conference provides a forum for scientists and engineers over the world to present their theoretical results and techniques in the field of computational intelligence and intelligent informatics, especially large modes. The conference proceedings containing accepted full papers will be published by Springer as Communications in Computer and Information Science (CCIS) proceedings and submitted to EI Compendex & Scopus for indexing. Selected papers with major modifications can be also recommended to the special issue of *Journal of Advanced Computational Intelligence and Intelligent Informatics* (JACIII, ESCI/SCOPUS/EI indexed) and *Computer Science* (CS, official journal of China Computer Federation).

Technical topics of the conference include but are not limited to:

Neural Networks	Fuzzy Systems	Evolutionary Computing	Emotion Computing	Soft Computing	Large Language Models
Artificial Intelligence	Machine Learning	Deep Learning	Reinforce Learning	Multi-agent Systems	Multimodal Fusion
Adaptive Systems	Data Mining	Data Fusion	Intelligent Systems	Network Security	Embodied Intelligence
Signal and Image Processing	Control Theory and Applications	Motion Control	Intelligent Control	Network-based Control	Humanoid Robots
Human-Computer Interface	Robotics	Mechatronics	Integrated Circuits	Unmanned Ssystems	Applications of AI

Sponsors:

International Association for Computational Intelligence (IACI)

Beijing Association of Automation (BAA)

Organizers:

Beijing Institute of Technology, Zhuhai

Beijing Institute of Technology

YGSOFT Inc.

Supporters:

International Fuzzy Systems Association

Japan Society for Fuzzy Theory and Intelligent Informatics (SOFT)

IEEE Computational Intelligence Society

IEEE-IES Technical Committee of Human Factors

IEEE Systems, Man, and Cybernetics Society

Technical Committee on Control Theory, Chinese Association of Automation

Technical Committee on Artificial Intelligence and Robot Education, Chinese Society of Educational Development Strategy

Zhuhai Doumen Association for Science and Technology

University of Science and Technology Beijing

Ningbo University

Zhuhai Computer Federation

Springer

Beijing Xipuli Education Technology Co., Ltd.

xFusion Digital Technologies Co., Ltd.

Zhuhai Zhixin Automation Technology Co., Ltd.

Fuji Technology Press Ltd.

Zhuhai Yunzhou Intelligence Technology Ltd.

ELFLECT Technology Co., Ltd.

Zhuhai City Association of New-Generation Information Technology and Artificial Intelligence

Program At a Glance

Oct.31	**Registration**	Xiangshan Conference Center, Gaoxin District, Zhuhai
Nov.1	**Day 1**	
8:30-9:00	Opening Ceremony Chair: Hongbin Ma	Xiangshan Hall
9:00-9:40	Keynote Speech 1 Chair: Hongbin Ma Learning and Feedback in the Control of Uncertain Systems By **Lei Guo** (Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China)	Xiangshan Hall
9:40-10:20	Keynote Speech 2 Chair: Yaping Dai A Paradigm Shift in Machine Learning: From Data to Data- Knowledge Environment By **Witold Pedrycz** (University of Alberta, Edmonton, Canada)	Xiangshan Hall
10:20-10:30	Technical Exchange from YGSOFT Inc. Chair: Yaping Dai	Xiangshan Hall
10:30-10:40	Tea Break	
10:40-11:20	Keynote Speech 3 Chair: Jinhua She Biomimetic Amphibious Spherical Father-son Underwater Robots By **Shuxiang Guo** (Southern University of Science and Technology, China)	Xiangshan Hall
11:20-12:00	Keynote Speech 4 Chair: Jinhua She Enhancing Collaborative Filtering for Advanced Recommender Systems By **Yasufumi Takama** (Tokyo Metropolitan University, Japan)	Xiangshan Hall
Lunch		
13:30-15:50	8 Parallel Sessions: 20 min/each oral presentation, 20 min x 7 (max) = 140 min OS1, OS2, OS3, OS4, GS1, GS2, GS3, GS4	Meeting Room 304/101/102/103/104/106/108/201
15:50-16:00	Break	
16:00-18:00	8 Parallel Sessions: 20 min/each oral presentation, 20 min x 6 (max) = 120 min OS5, OS6, OS7, OS8, GS5, GS6, GS7, GS8	Meeting Room 304/101/102/103/104/106/108/201
13:30-17:30	Special Session on Wisdom in Systems and Control	Meeting Room 105
Nov.2	**Day 2**	
8:30-9:10	Keynote Speech 5 (online) Chair: Hongbin Ma Teleoperation of Swarm Robotics By **Yang Shi** (University of Victoria, Canada)	Xiangshan Hall
9:10-9:50	Keynote Speech 6 Chair: Hongbin Ma Strategic Layout and Practice of AI Education in China By **Liqun Han** (Beijing Technology and Business University, China)	Xiangshan Hall
9:50-10:00	Technical Exchange from Zhuhai Zhixin Automation Technology Co., Ltd. Chair: Hongbin Ma	Xiangshan Hall
10:00-10:10	Tea Break	
10:10-10:50	Keynote Speech 7 Chair: Bin Xin Opportunities and Challenges for Medical Robotics in the Age of AI By **Zengguang Hou** (Institute of Automation, Chinese Academy of Sciences, China)	Xiangshan Hall
10:50-11:30	Keynote Speech 8 Chair: Bin Xin AI-Driven High-Definition Glasses-free 3D Light Field Display with Large-Viewing-Angle By **Xinzhu Sang** (Beijing University of Posts and Telecommunications, China)	Xiangshan Hall
11:30-12:10	Keynote Speech 9 Chair: Bin Xin Can LLMs Revolutionize Formal Verification: Gaps and Opportunities? By **Shing-Chi Cheung** (The Hong Kong University of Science and Technology, China)	Xiangshan Hall
9:00-11:00	AI Contest Show	Meeting Room 102
Lunch		
13:30-15:30	6 Parallel Sessions: 20 min/each oral presentation, 20 min x 6 (max) = 120 min OS9, OS10, OS11, GS9, GS10, GS11	Meeting Room 304/103/104/106/108/305
15:30-16:00	Break	
16:00-18:00	6 Parallel Sessions: 20 min/each oral presentation, 20 min x 6 (max) = 120 min OS12, OS13, GS12, GS13, GS14, GS15	Meeting Room 304/103/104/106/108/305
14:00-18:00	Special Session on Artificial Intelligence in Education	Meeting Room 105
14:00-18:00	Inaugural Meeting of the International Association for Computational Intelligence	Meeting Room 102

14:00-18:00	YGSOFT Inc. Young Scholars Forum: Large Models and Multi-Technology Integration and Applications Meeting Room 101
14:00-18:00	Special Session on Innovative Product Roadshow Meeting Room 201
18:30-20:00	**Welcome Banquet** Banquet Hall
Nov.3	**Day 3**
8:30-9:10	Keynote Speech 10 Chair: Hongbin Ma Xiangshan Hall AI for Digital Twin By **Yan Zhang** (University of Electronic Science and Technology of China)
9:10-9:50	Keynote Speech 11 (online) Chair: Hongbin Ma Xiangshan Hall Collaborative Innovation Technologies and Applications for Large and Small Models By **C. L. Philip Chen** (South China University of Technology, China)
9:50-10:00	Tea Break
10:00-10:40	Keynote Speech 12 Chair: Jinhua She Xiangshan Hall Interpretability and Transferability in Deep Learning By **Kazuhiko Kawamoto** (Chiba University, Japan)
10:40-11:20	Keynote Speech 13 Chair: Jinhua She Xiangshan Hall Network Intrusion Detection for IoT Environments with Limited Resources By **JianQing Li** (Macau University of Science and Technology, China)
11:20-12:00	Keynote Speech 14 (online) Chair: Hongbin Ma Xiangshan Hall Adaptive Intelligent Robotic Control Using Fuzzy Deep, Broad and Reinforcement Learning Techniques By **Ching-Chih Tsai** (Chung Hsing University, China)
Lunch	
13:30-15:50	6 Parallel Sessions: 20 min/each oral presentation, 20 min x 7 (max) = 140 min OS14, OS15, OS16, OS17, OS18, OS19 Meeting Room 101/102/103/104/105/106
15:50-16:00	Break
16:00-17:00	**Closing/Award Ceremony** Xiangshan Hall 16:00-17:00 Conference Summary & Award Ceremony
Nov.4	**Day 4**
9:00-9:15	Hotel -> YGSOFT Inc.
9:15-10:00	Visit YuanGuang Smart Park Exhibition Hall
10:00-10:15	YGSOFT Inc. -> Yunzhou Intelligent Technology Co., Ltd.
10:15-11:00	Visit Yunzhou Intelligence Exhibition Hall
11:00-11:15	Yunzhou Intelligent Technology Co., Ltd. -> Tangjia Ancient Town
11:00-12:00	Visit Tangjia Ancient Town / Tang Shaoyi's Former Residence
12:00-14:00	Lunch and Free Time in Tangjia Ancient Town
14:00-15:00	Tangjia Ancient Town -> Hengqin Planning Pavilion
15:00-16:00	Visit Hengqin Guangdong-Macao In-depth Cooperation Zone Planning Exhibition Hall
16:00-16:20	Hengqin Planning Pavilion -> Traditional Chinese Medicine Industry Park
16:20-17:30	Visit Hengqin Traditional Chinese Medicine Culture Experience Hall

Keynote Speeches


2025年11月1日 中国·珠海
http://iwaciii.bit.edu.cn
系统控制之美
Wisdom in Systems and Control
论坛主持
马宏宾 教授 北京理工大学
王琳 教授 上海交通大学
穆义芬 副研究员 中国科学院数学与系统科学研究院
报告嘉宾
夏元清 会士/教授/校长 中原工学院、北京理工大学
报告主题
智能网联无人系统云控制理论与技术
Cloud Control Theory and Technology for Intelligent and Networked Unmanned Systems
刘峰 副教授 北京交通大学
报告主题
随机博弈控制系统中的一些问题
Some Problems in Stochastic Game Control Systems
张艳霞 副教授 北京理工大学
报告主题
关于线性子空间之间的角度度量
On the angular metrics between linear subspaces
王琳 教授 上海交通大学
报告主题
自动驾驶测试场景生成与综合评测方法研究
Study on Test Scenario Generation and Comprehensive Evaluation Methods for Autonomous Driving
穆义芬 副研究员 中国科学院数学与系统科学研究院
报告主题
对学习算法的最优对策及重复博弈中的异质动力学：从人机博弈开始
The algorithm exploitation and heterogeneous learning dynamics: all from human-machine games
潘豪 研究员 航天十二所
报告主题
运载火箭高可靠姿态控制技术
High-Reliability Attitude Control Technology for Launch Vehicles
丛新蓉 副教授 北京工商大学数学与统计学院
报告主题
基于参数不确定性的机翼可压缩流动控制研究
Study on Compressible Flow Control of Wings Based on Parametric Uncertainty
袁硕 美国韦恩州立大学
报告主题
含间歇性电源的电力系统随机自适应下垂控制
Stochastic Adaptive Droop Control of Power Systems with Intermittent Generators
苏伟 北京交通大学
报告主题
随机噪声驱动自组织复杂系统模型的同步
Noise-driven synchronization in self-organizing complex systems
陈辉 北京理工大学
报告主题
自适应模型预测控制的可行性与收敛性
Feasibility and Convergence of Adaptive Model Predictive Control


2025年11月2日 中国·珠海
http://iwaciii.bit.edu.cn
AI与机器人教育专委会分论坛
论坛主持
李擎 中国教育发展战略学会人工智能与机器人教育专委会副理事长
常根景 中国教育发展战略学会人工智能与机器人教育专委会常务副秘书长
报告嘉宾
丁数学 桂林电子科技大学人工智能学院首任院长
报告主题
《非梯度反向传播算法-神经网络及深度学习的训练》
课题报告
肖成勇 北京科技大学高级工程师
报告主题
《AI大模型赋能智能制造综合实践教学平台探索与实践》
王子民 桂林电子科技大学计算机与信息安全学院副教授
报告主题
《面向东盟的新兴科技赋能产教融合、跨学科、跨领域协同育人创新机制研究》
祁亨年 湖州师范大学科研处处长、教授
报告主题
《复杂场景古今汉字检测与识别研究》
靳励行 西安电子科技大学杭州研究院博士后
报告主题
《手术机器人力反馈主从操作控制器关键技术》
王兴 安徽三联学院现代康养产业学院副院长、总工程师
报告主题
《医工信跨界融合下康养产业人才培养模式创新研究》
曾子铭 深圳职业技术大学本科教育学院副教授
报告主题
《AI赋能智能网联汽车职业教育的探索与实践》
杨富超 河南工学院智能工程学院副院长
报告主题
《应用型本科院校“专创融合”育人模式实践与探索》
黄莺 广西生态工程职业技术学院人工智能产业学院院长
报告主题
《智能科技驱动跨学科心流学习模式创新》


远光软件青年学者论坛
时间：2025年11月2日13:30-17:30
地点：香山会议中心（待定）
大模型及多技术融合应用
论坛议程
时间 环节 内容 分享嘉宾
13:30-13:40 开场 论坛背景与远光软件介绍 鲁静 远光软件科研院副院长
13:40-14:00 远光技术分享 企业垂域大模型构建探索与实践 吴士泓 远光软件AI平台部总经理
14:00-14:20 远光技术分享 大模型重构研发范式 罗建光 远光软件高级开发专家
14:20-15:20 青年学者主题分享(2位)+思维辩论环节 每位15min主题分享+15min各参会青年学者思维辩论环节 青年学者（待定）
15:20-15:30 茶歇
15:30-16:30 青年学者主题分享(2位)+思维辩论环节 每位15min主题分享+15min各参会青年学者思维辩论环节 青年学者（待定）
16:30-17:30 圆桌讨论 企业CTO/技术总监面对面 鲁静 远光软件科研院副院长
参会请扫二维码
做报告 · 赢大奖 · 拿Offer
与同领域青年碰撞思维火花
与企业CTO/技术总监圆桌面对面
直通国内领先上市企业研究院专家库
主题报告/思辨观点征集
征集方向：
1.（财务、电力）垂直大模型构建；
2.大模型重构软件开发范式；
3.多智能体协同机制；
4.其他“大模型”相关创新技术（如“数字孪生”等人工智能方向）。
您将有可能获得如下荣誉与奖励：
1. 优秀主题报告奖（1名） 【奖品+证书】
2. 最活跃思辨观点奖（1名） 【奖品+证书】
3. 人才直通车：一封推荐信，直通未来机遇——推荐为“远光研究院专家库技术专家”
4. 远光精美礼品
扫码填写征集信息

Parallel Sessions

Nov. 1 Saturday

OS1: Organized Session: Learning, Evolution and Control in Dynamical Games

13:30-15:30, Sat., Nov.1 **Meeting Room 304**

Session Chairs: Yifen Mu; Lin Wang

13:30-13:50 Modeling Complex Systems via Game-Theoretic Learning: Dynamics and Properties of Individual Agents
*Wei Su**

13:50-14:10 Loop Path Topology for Conflict-Free Scheduling of Multi-Robot Warehouse Systems
Jinrui Mou, Zhaokai Liu, Ruyi Jiang, Lin Wang, Xiaofan Wang*

14:10-14:30 Online Model-Pool Selection and Fusion for Adaptive MARL in Wargames
Zhikai Zhou, Hongbin Ma, Ying Jin, Yehao Fang, Haipeng Wang*

14:30-14:50 Coalition Dynamics and Its Dynamic Stability in Three-Player Zero-Sum Games
*Wen Zhang, Yifen Mu**

14:50-15:10 Cooperation evolution in an overlapping generations game
*Kaibing Li, Renren Zhang**

15:10-15:30 The Algebraic Relationships between DK-STP and STP
*Qi An, Changxi Li, Jun-e Feng**

OS2: Organized Session: Human-Centered Intelligent Systems A

13:30-15:10, Sat., Nov.1 **101 Fenghuangshan Hall**

Session Chairs: Shinichi Yoshida; Eri Sato-Shimokawara

13:30-13:50 Vision Transformer Model for Lung Disease Classification using Chest X-ray Images
Ryota Ueki; Narufumi Suganuma; Yoshua Kazukuni Nomura; Zhen Zhang; Shinichi Yoshida*

13:50-14:10 Synergistic Multi-Task BERT Framework for Event Extraction and Self-Efficacy Assessment in Rehabilitation Chatbot Dialogues
Yuqi Zhang; Yuning Shi; Han Shi; Naoyuki Kubota*

14:10-14:30 Cascading Features of Convolutional Neural Network for Pneumoconiosis Detection
Keisuke Shiiba; Shinichi Yoshida; Yui Nomura; Yoshua Kazukuni Nomura; Narufumi Suganuma*

14:30-14:50 Validating a Dynamic-Load Pedaling Paradigm for Gait Rehabilitation: A Muscle Synergy Analysis
Qiwei Wu; Jinhua She; Shijie Guo; Daisuke Chugo*

14:50-15:10 Small-Sample Training Data Augmentation via Pix2Pix for YOLO v8-based Fruit Detection
Zhen Zhang; Shinichi Yoshida*

OS3: Organized Session: Physically Inspired Intelligent Optimization: From Theory to Real-World Systems A

13:30-15:30, Sat., Nov.1 **102 Hongshulin Hall**

Session Chairs: Lan Cheng; Chunmei Zhang

13:30-13:50 A 3D Gaussian Splatting-Based Framework for Occlusion-Aware Reconstruction of Immovable Cultural Heritage from Crowd-Sourced Data
Jianning Qin; Lan Cheng; Zixi Qi; Zhe Zhang; Wanchen Liu*

13:50-14:10 G-COA : an optimization algorithm inspired by celestial motion behavior
Kai Wang; Kuo Yang; Mifeng Ren; Wenjie Zhang; Zhile Yang*

14:10-14:30 A Study on the Force Mechanism of a Many-objective Artificial Physics Optimization Algorithm Based on Clustering and Information Entropy
Weizhe Li; Liping Xie*

14:30-14:50 Optimal regulation of green heating systems in parks considering economy and thermal comfort
*Yuanyuan Dai; Jianyan Tian**

14:50-15:10 Improved Kepler Optimization Algorithm Based on Hybrid Strategies
Hongge Guo; Pengpeng Su; Zinan Liang*

15:10-15:30 Application of Multi-Strategy Harris Hawks Optimization Algorithm in Path Planning
Yuyan Zhang; Chunmei Zhang; Fanzhu Hao; Long Ding*

OS4: Organized Session: Computational Intelligence and System Engineering A

13:30-15:30, Sat., Nov.1 **103 Jinding Hall**

Session Chairs: Yang Zhang; Yuan Xu

13:30-13:50 ANAFD: A Lightweight Method for Rapid Plant Fertilization Deficiency Detection Using Optimized NCC Localization and Enhanced Feature Recognition
Xuebin Zhu; Ying Lin; Wei Ke; Jiaren Liu; Yuan Xu*

13:50-14:10 SDAUnet: A Satellite and Radar-Based feature fusion approach for short-term precipitation forecasting
Chongxing Ji; Yuan Xu; Wei Ke; Lili Tang; Chenyang Yan; Yizhou Zhang*

14:10-14:30 Adaptive Multi-Object Tracking with Motion Indeterminacy Diffusion and Dynamic Fusion
*Ruihan Yang; Minghao Chen; Pu Du; Yang Zhang; Yuan Xu**

14:30-14:50 Fault Diagnosis Methods Based on Spatio-Temporal Feature Fusion
Yongxin Zhou; Yuan Xu; Yi Luo; Wei Ke; Qunxiong Zhu; Yang Zhang; Mingqing Zhang*

14:50-15:10 Dual-View Contrastive Learning with Multi-Scale Label Propagation
*Yuan Xu; Haoting Liu; Junshuo Du; Shu Kong; Yi Luo; Wei Ke; Qunxiong Zhu; Yanlin He; Yang Zhang; Mingqing Zhang**

15:10-15:30 Design and Implementation of Office Automation Management System in Airfield Construction
Li Dong; Xiaofei Yang; Guoliang Zhai; Haiyang Chen; Xiao Wang; Ronglai Sun; Chao Shi*

GS1: General Session: Intelligent Decision-Making and Optimization

13:30-15:30, Sat., Nov.1 **104 Tangjia Hall**

Session Chair: Bin Xin

13:30-13:50 A Multi-Operator Evolutionary Algorithm for the Multi-Objective WTA Problem
Chengxin Wen; Fuhao Liu; Ting Wang; Hongbin Ma; Yanhuan Jiang*

13:50-14:10 An adaptive multi-granularity dynamic task reallocation method based on CBBA
Binhua Guo; Bin Xin; Yixi Yang*

14:10-14:30 Complete Coverage Path Planning based on Comprehensive Improved Particle Swarm Optimization Algorithm
Jian Fu; Xinlei Yin*

14:30-14:50 Multi-UGV Task Allocation Based on Improved NSGA-II Algorithm for Forest Firefighting
Zijian Zhou; Jia Zhang; Mingchang Chen*

14:50-15:10 Research on Cooperative Application of UAV Swarm based on Cyber Network
*Mingqiu Ren**

15:10-15:30 Research on Anti-Drone Task Allocation Based on Deep Reinforcement Learning
*Chengliang Zhou**

15:30-15:50 A Situation Awareness Method for UAV Swarm Based on Modified Endsley Model
*Bi Wu; Liang Yu; Zhiqian Zhou**

GS2: General Session: Smart Healthcare and Rehabilitation

13:30-15:10, Sat., Nov.1 **Meeting Room 106**

Session Chair: Jinhua She

13:30-13:50 Deep Learning-based Quantification of Lumbar Disc Herniation on High-resolution Magnetic Resonance Imaging
*Lizhong Ding; Wenxin Chen; Qina Wu; Hongdian Zhu; Changsheng Li; Jing Zhao; Xingguang Duan**

13:50-14:10 A Survey of Deep Learning Models from DCNNs to Transformers for Correcting MRI Artifacts and Assisting Smart Healthcare
Dingxi Liu; Lichuan Ning; Yuanmin Xie*

14:10-14:30 LungAide: An effective 3D Transformer V-Net for Lung Nodule Detection
*Xinyuan Gao; Lei Dong; Xingwang Liu; Sijie Yin; Hao Chen**

14:30-14:50 Concordance-Assisted Learning for Estimating Optimal Individualized Treatment Regimes with Censored Data
Jianlin Zhang; Yinglin Jiao; Lin Luo; Hui Dong; Jianuo Yang*

14:50-15:10 PID control with pedal torque estimation for safety monitoring in lower-limb rehabilitation robots
Yue Jing; Jinhua She; Seiichi Kawata; Zewen Wang*

GS3: General Session: Smart Grid and Power Systems

13:30-15:50, Sat., Nov.1 **VIP Meeting Room 108**

Session Chair: Weidong Zou

13:30-13:50 A Quantum-Based High-Precision Current Transducer for Smart Grid Applications
Sanlei Dang; Bo Zhang; Yang Yang; Qiang Song; Dingqu Zhang; Zhengmin Kong; Mohammad Allahbakhsh*

13:50-14:10 Power Grid Equipment Supply Chain Risk Identification Method Based on a Stochastic Configuration Network with Compression Coefficients
Lingxiao Cui; Haitao Zhang; Jinyong Zhao; Fuling Fan; Ning Xu*

14:10-14:30 Enhancing Power Equipment Anomaly Detection Performance with RobustSTL and Anomaly Transformer
*Zuo Lu; Yixiang Deng; Peiran Xing; Xiaoyang Wang**

14:30-14:50 A Study on Secondary Control Strategy for Islanded Microgrids Based on Twin Delayed Deep Deterministic Policy Gradient
Yuntao Shi; Haifeng Guo; Xiang Yin; Keqing Gao; Shufeng Zhang*

14:50-15:10 Research on a Joint Quantity-Price Forecasting Model Based on Virtual Power Plant Entity Revenue Optimization
Xiaodong Cheng; Baoshi Wang; Jun Qiao; Lanxu Wu; Pengdong Tian

15:10-15:30 Risk-Averse MPC-Based Secondary Voltage Centralized Compensation Strategy for Microgrids
Yuntao Shi; Keqing Gao; Xiang Yin; Haifeng Guo; Shufeng Zhang*

15:30-15:50 Research on Energy Storage Revenue and Electricity Pricing Strategy Based on Virtual Power Plant Operation
Baoshi Wang; Lanxu Wu; Pengdong Tian; Kai Xu

GS4: General Session: Advanced Control Methods-A

13:30-15:50, Sat., Nov.1 VIP Meeting Room 201

Session Chair: Qing Wang

13:30-13:50 Fixed-Time Sliding-Mode Control for Quadrotor Attitude Tracking With Prescribed Performance
Mingwei Liu; Qing Wang; Junzhe Cheng; Bin Xin,*

13:50-14:10 The Third-Order Smooth Transition Strategy (TOSTS) apply to the sensor-less tightening system
*Shuanxin Wang; Yanzhuang Shi; Kewei Chen; Fangyan Dong**

14:10-14:30 Enhanced Active Disturbance Rejection Attitude Control with Resonant Optimization for a Quadrotor
*Yang Hao; Wei Wei**

14:30-14:50 传感器故障模式下无人机的自适应飞行控制
*Xiaoyong Guo; Jianhong Wang**

14:50-15:10 Torque Distribution Strategy Based On Multi-Mode Clutch Transmission

Yang Gao; Xueliang Shan; Huanhuan Gong; Zhidong Gao; Ruiguang Wang; Zhengxing Dai; Jiangfeng Liu; Yiqiang Liu*

15:10-15:30 A Multi-Ship Intelligent Cooperative Control Framework Based on Hierarchical Reward

*Yang Bai; Hao Li; Chi Zhang; Shengrong Xie**

15:30-15:50 Synergistic Re-parameterizable Attention and Context-Aware Fusion for PCB Defect Detection

*Benbo Liu; Zhengyu Fu; Jinhua Wu; Kewei Chen; Fangyan Dong**

OS5: Organized Session: Model- and AI-Driven Manufacturing and Service Systems

16:00-17:40, Sat., Nov.1 Meeting Room304

Session Chair: Zhiyang Jia

16:00-16:20 Research on Intelligent Alignment Devices for GIS Disconnectors

Liang Zhao; Yujing Liu; Xi Zhang; Jiayuan Zhang; Ruifeng Li*

16:20-16:40 Vision and Servo-Based Camshaft Pulley Tightening Technology

Xi Zhang; Jinpeng Yuan; Yujing Liu; Jin Cheng; Zhaohua Pei; Jiayuan Zhang*

16:40-17:00 Research on Lightweight Fuel Cell DC/DC

*Yue Kong**

17:00-17:20 Virtual Commissioning and Simulation Method for Industrial Robots Based on Digital Twin Technology

Minghao Duan; Zhenyu Xie; Xi Zhang; Xin Li; Jinpeng Yuan*

17:20-17:40 A cloud-native-based thermal processing simulation platform engineering case

Xingjian Wang; Jianchao Zhang; Bin Chen; Yijing Zhao; Shihong Yan; Fanlei Min*

OS6: Organized Session: Session: Human-Centered Intelligent Systems B

16:00-17:40, Sat., Nov.1 101 Fenghuangshan Hall

Session Chairs: Shinichi Yoshida; Eri Sato-Shimokawara

16:00-16:20 Temporal morphological analysis of NK cells

Takuho Myojin; Yukinobu Hoshino; Namal Rathnayake; Shimpei Yamamoto*

16:20-16:40 A Feasibility Study on Analyzing the Relationship Between Mental States and Music Using Physiological Signal Processing

Yunheng Li; Eri Sato-Shimokawara*

16:40-17:00 Comparison of Explainability Algorithms for Pneumoconiosis Classification Deep Learning Models

Ryo Takeda; Shinichi Yoshida; Narufumi Suganuma; Yoshua Kazukuni Nomura; Zhen Zhang*

17:00-17:20 Transfer Learning for Low-Resource Human Daily Action Recognition Using Topological Memory and Gated Attention Fusion

Yuning Shi; Yuqi Zhang; Qingwei Song; Han Shi; Naoyuki Kubota*

17:20-17:40 Fuzzy Clustering-Based Data Augmentation for Yuzu Fruit Detection

Kazuki Kagawa; Shinichi Yoshida; Zhen Zhang*

OS7: Organized Session: Physically Inspired Intelligent Optimization: From Theory to Real-World Systems B

16:00-18:00, Sat., Nov.1 **102 Hongshulin Hall**

Session Chairs: Lan Cheng; Chunmei Zhang

16:00-16:20 Three-Dimensional Path Planning for Multiple UCAVs Based on the MP-GWO Algorithm
Chenghao Li; Chunmei Zhang; Fanzhu Hao; Zhenyang Zhao*

16:20-16:40 MRLLM: Multimodal Knowledge and Feedback Based Refinement Assist for Robotic Arm Operations using Large Language Model Reasoning

*Zhibin Yang; Zhi Zheng**

16:40-17:00 DBSCAN clustering and Angle-Correlation driven Bi-Population Constrained Multi-Objective Artificial Physical Optimization
*Kaipeng Song; Liping Xie**

17:00-17:20 Intelligent decision-making technology based on brain-inspired spiking neural networks
Song Xu; Wenjing Duan; Jie Li; Lina Wang*

17:20-17:40 Quantum-hybrid Multi-objective Artificial Physics Optimization Algorithm
*Xingyu Chen; Liping Xie**

17:40-18:00 An Angle-Penalty Distance and Polarity-Division Guided Algorithm for Many-Objective Electric Field Optimization
*Yue Zhang; Liping Xie**

OS8: Organized Session: Computational Intelligence and System Engineering B

16:00-17:40, Sat., Nov.1 **103 Jinding Hall**

Session Chairs: Yang Zhang; Yuan Xu

16:00-16:20 An Imbalance Fault Diagnosis Method Based on Improved FixMatch Assisted Semi-Supervised CWGAN
Lili Tang; Yuan Xu; Wei Ke; Chongxing Ji*

16:20-16:40 Train delay data generation based on improved CTGAN
Qingyun Fu; Tao Zhang; Shuxin Ding; Zhiming Yuan; Yanhao Sun*

16:40-17:00 MACAE-Based Detection of Acoustic Signal Anomalies in Industrial Equipment
Yang Zhang; Taoying Chen; Pu Du; Yuan Xu; Mingqing Zhang; Qunxiong Zhu*

17:00-17:20 An Algorithm based on History Data for Multi-sensors Error Intelligent Correction
*Hao Wang**

17:20-17:40 RDPFlow: A conditional diffusion model for traffic flow prediction with point-wise missing data
*Yuan Xu; Chenyang Yan; Qunxiong Zhu; Mingqing Zhang; Wei Ke; Chongxing Ji; Yang Zhang**

GS5: General Session: Smart Education

16:00-17:40, Sat., Nov.1 **104 Tangjia Hall**

Session Chairs: Bemnet Wondimagegnehu Mersha; Yaping Dai

16:00-16:20 Intelligent Detection of Student Classroom Behavior Based on an Improved YOLOv8 Model
Meng Zhou; Huifang Zhang; Yuchao Peng; Jing Wang; Zhe Dong; Jie Fan*

16:20-16:40 Improving Generative Aspect-Based Sentiment Analysis via Multi-View Data Augmentation and Supervised Contrastive Learning
*Yanhong Wang; Lei Chen; Xin Wang; Lin Yao**

16:40-17:00 Dual-Path Attention-Enhanced Graph Convolutional Network for Children's Speech Emotion Recognition
Deneng Tang; Liwei Lin; Haojie Huang; Qixuan Liu*

17:00-17:20 Design and Implementation of a Locally Deployed Intelligent Composition Correction and Personalized Tutoring System for Primary Education
*Guanmou Li; Zhifeng Chen**

17:20-17:40 Evaluating Learning States in Synchronous Remote Classes via Qwen2.5-Max with RAG and ReAct Agent
Haoyuan He; Bemnet Wondimagegnehu Mersha; Yaping Dai; Kaoru Hirota; Wei Dai; Yumin Lin*

GS6: General Session: Advanced Robotics and Component Design

16:00-18:00, Sat., Nov.1 **Meeting Room 106**

Session Chair: Xuan Li

16:00-16:20 Research of Mechanical Characterization of Bio-inspired Artificial Muscles
Yuntao Li; Xiaolong Zhang; Jiaming Bai; Zuan Li; Guopeng Wang; Deen Bai*

16:20-16:40 Design of Space Continuum Robot Based on Spring and Bionic Muscle Antagonistic Actuation
Guopeng Wang; Senchun Yao; Yanmei Li; Zuan Li; Yuntao Li*

16:40-17:00 Kinematic Parameter Calibration for Ophthalmic Surgical Robots with Cameras
*Yanlin Li; Kaiyuan Tan; Zhaoyin Tian; Rihui Song**

17:00-17:20 Flexible Wearable Sensor Based on Molecularly Imprinted Polymers for Wound Glucose Monitoring
Jiale Gong; Xuan Wang; Yizhuo Ma; Maria Abbasi; Runhong Lei; Shengnan Ma; Taha Siredj Mounir Herhira; Niu Zhang; Long Zhang; Jing Wei; Lina Geng*

17:20-17:40 Development of an Electrochemical Chiral Sensor Based on UiO-66-NH_2-L-Pro Metal-Organic Framework for Enantioselective Detection of Threonine
Yizhuo Ma; Maria Abbasi; Jiale Gong; Jia Huang; Shengnan Ma; Taha Siredj Mounir Herhira; Niu Zhang; Runhong Lei; Yongrui Li; Lina Geng*

17:40-18:00 Design of a CoM Following Device for Microgravity Climbing Tests on Space Bio-Inspired Robot
Zuan Li; Senchun Yao; Guopeng Wang; Ze Yu; Yuntao Li*

GS7: General Session: Machine Learning

16:00-18:00, Sat., Nov.1 **VIP Meeting Room 108**

Session Chair: Wei Wei

16:00-16:20 Optimization of traction transformer status prediction based on missing data imputation
Guanlin Qu; Wei Wei; Weifan Wang*

16:20-16:40 Online Fine-tuning for Robustness in Offline Reinforcement Learning: Actor-Critic vs Decision Transformer
*Shingo Ayabe; Hiroshi Kera; Kazuhiko Kawamoto**

16:40-17:00 Cascade adaptive phase optimized active disturbance rejection control for ultra-supercritical units
*Jiangyu Jia; Wei Wei**

17:00-17:20 Feature Expansion based Graph Transformer for Node Classification
*Yun Chen; Canxin Chen; Jiaqing Tong; Xiangyuan Ma**

17:20-17:40 API Sequence Representation via Stochastic Distribution Prediction
Qiaohua Deng; Wei Dai; Yumin Lin; Weiyan Ma; Yan Yu; Luguang Huang*

17:40-18:00 Frequency-Masked Embedding Inference: A Non-Contrastive Approach for Time Series Representation Learning
*En Fu; Yanyan Hu**

GS8: General Session: Advanced Control Methods-B

16:00-18:00, Sat., Nov.1 VIP Meeting Room 201

Session Chair: Guiping Lu

16:00-16:20 Intelligent Optimal Control of Lithium-Ion Battery Liquid Cooling Systems Based on Deep Reinforcement Learning
*Jiakai He; Zhifei Xu; Yingzi Han; Xingzhu Chen; Jiaxu Zhang; Mengjie Ye**

16:20-16:40 Research on Environmental Regulation in Facility Agriculture Based on LSTM–LLM Cooperative Mechanism
Wenhui Li; Guiping Lu; Weidong Hu; Yuan Gao; Meiran Zhu; Yuhua Jin; Xuqi Guo*

16:40-17:00 Finite-Time Control for Networked Systems with Actuator Saturation under Hybrid Attacks
Menghua Chen; Wanyuan Chen; Dechang Zou*

17:00-17:20 Decoupling-Model-Based MPC Synthesis for 5-DOF Magnetic Levitation Bearings
Taizhou Yin; Yaojian Wang; Hongze Xu*

17:20-17:40 A novel adaptive control method for nonlinear systems subject to state constraints
*Hanzhang Qu; Ye Cao**

17:40-18:00 Distributed Model Predictive Control for Perturbed Nonlinear Multi-Agent Systems with Proportional-Derivative-Integral Event-Triggered Mechanism
Zhan Lu; Yan Ren; Liyun Zhao; Bowen Zhang; Yuanzhuo Hu*

Nov. 2 Sunday

OS9: Organized Session: Advanced Sensing and Intelligent Signal Processing A

13:30-15:30, Sun., Nov.2 **Meeting Room 304**

Session Chair: Xiaoyan Zhao

13:30-13:50 Optimization Methodology for Wire-Generated Magnetic Disturbances in Magnetic Positioning System
Zhipeng Gou; Zhaohui Zhang; Tianyao Zhang; Xiaoyan Zhao; Fan Song; Hanyuan Wang; Chunlei Li*

13:50-14:10 Few-Shot Learning at extremely low signal-to-noise ratio for noise suppression
Peitong Li; Dingshan Li; Bin Yao; Liang Liang; Yige Wang*

14:10-14:30 Detection of Magnetic Anomalies in Underground Cavities Based on SQUID
Hanyuan Wang; Xiaoyan Zhao; Zhaohui Zhang; Tianyao Zhang; Zhipeng Gou; Fan Song; Chunlei Li; Lei Han*

14:30-14:50 Cardiac Magnetic Field Simulator Based on Timing Control
Hongxia Li; Zhaohui Zhang; Tianyao Zhang; Xiaoyan Zhao; Jianmei Guo; Lei Han*

14:50-15:10 Design and Application of a Wide-band Frequency High-precision Multibeam Sonar System
Yunlong Tang; Siyuan Zhang; Dong Lu; Ke Ding*

15:10-15:30 Exploration and Application of a Quality Evaluation System for Cardiac Magnetic Field Signals of Magnetocardiograph
Lei Han; Zhaohui Zhang; Xiaoyan Zhao; Tianyao Zhang*

OS10: Organized Session: Affective Computing and Human-Robot Interaction for Mental Health A

13:30-15:30, Sun., Nov.2 **103 Jinding Hall**

Session Chairs: Zhentao Liu; Longxiang Luo

13:30-13:50 Conversational Multi-modal Emotion Recognition Based on Heterogeneous Dialogue Graph and Sentiment Polarity Contrastive Learning
*Chengshan Jiang; Zhentao Liu**

13:50-14:10 Human-machine Consistency Verification of Text Empathy Automated Scoring in Online Peer Support Scenarios
*Ruoyan Wu; Dan Chen; Chenling Liu; Zhentao Liu**

14:10-14:30 Cognitive Impairment Detection Based on Clock Drawing Test Image Classification
Jiale Wu; Zhentao Liu; Enchao Guo; Xingru Jiang*

14:30-14:50 Trust as Social Script in Human-machine Communication: Evidence from Mobile Banking Chatbots
*Longxiang Luo; Fanke Chen; Zhentao Liu**

14:50-15:10 SHAP-based interpretion of machine learning prediction models for mild cognitive impairment
*Zongqin Wang; Zhong Ding; Chenling Liu; Baoliang Zhong; Jin Lu**

15:10-15:30 Culturally Adapted Picture-Description Driven Mandarin Speech Approach for Cognitive Impairment Screening

Anjie Dai; Dan Chen; Zhentao Liu; Zongqin Wang; Baoliang Zhong*

OS11: Organized Session: Intelligent Perception in Robotics

13:30-15:30, Sun., Nov.2 **104 Tangjia Hall**

Session Chair: Juntong Yun

13:30-13:50 Application of multimodal perception in target recognition
Jiaxin Tang; Lichuan Ning; Yuanmin Xie*

13:50-14:10 Target Classification and Recognition Technology Based on Motion Parameter Feature Matching
*Xuantong Yu**

14:10-14:30 Intelligent Perception of Logistics Crane Based on OpenMV
Xiaolei Peng; Lichuan Ning; Yuanmin Xie*

14:30-14:50 Fast-LIO2 and Vision Fusion Logistics Walking System
Xiangdong Xu; Lichuan Ning; Yuanmin Xie*

14:50-15:10 Maintenance target detection algorithm based on improved YOLO v10
Pengyu An; Yingsun Li; Zhannan Guo; Xin Liu; Xue Sun; Xiaoyong Zeng*

15:10-15:30 A Survey of Multimodal Fusion and 3D Perception Techniques in Deep Multi Object Tracking
Leyuan Zhang; Lichuan Ning; Yuanmin Xie*

GS9: General Session: Object Detection, Recognition and Tracking-A

13:30-15:10, Sun., Nov.2 **Meeting Room 106**

Session Chair: Zuowei Zhang

13:30-13:50 Aircraft Detection in Remote Sensing Images using YOLOX-DCSA
Meijing Gao; Sibo Chen; Xiangrui Fan; Huanyu Sun; Xu Chen; Bingzhou Sun; Ning Guan*

13:50-14:10 A Context-Aware Cross-Modal Correction and Fusion Network for Anti-UAV Target Recognition
Rui Shen; Jiawei Niu; Zihan Li; Zuowei Zhang*

14:10-14:30 SCS-YOLO: An Occlusion-Robust Object Detection Algorithm Based on YOLO12
Dexin Liu; Chengzhi Ren; Hongyan Ma; Yuchen Zhang; Wenwen Yu*

14:30-14:50 FLSNet: Small Object Detection Algorithm Based On RT-DETR
Wenwen Yu; Yuchen Zhang; Hongyan Ma; Chengzhi Ren*

14:50-15:10 RecreTrack: Synergistic Appearance Modeling for RMOT
Haitao Xiao; Liping Yan; Yuanqing Xia*

GS10: General Session: Defect/Anomaly/Fault Detection and Processing-A

13:30-15:10, Sun., Nov.2 **VIP Meeting Room 108**

Session Chair: Zengwang Jin

13:30-13:50 An Attention-Enhanced LSTM Method for Industrial Server Anomaly Detection Based on Prediction Error
*Zhe Wang; Xiao Huang; Zhan Shu; Guozhu Wen; Tianyu Gong**

13:50-14:10 Cyber Attack Detection Based on Clustering and Adaptive Model Selection
*Huayu Song; Zenghui Hu**

14:10-14:30 Dual-Path Ransomware Detection Framework
Yixin Sun; Hanyu Mao; Wei Dai; Yumin Lin*

14:30-14:50 SFL-YOLO: A Lightweight Real-Time Welding Seam Defect Detection Algorithm Based on YOLOv11
*Ao Kang; Aidong Ge; Mingcan Sun**

14:50-15:10 Power Material Supply Chain Security Risk Early Warning Based on Self-Adaptive Convergence Factor Matrix-Iterative Extreme Learning Machine
Hongzhi Sun; Jinyong Zhao; Lingxiao Cui; Jiamian Wang; Shengping Yao*

GS11: General Session: Imaging and Image Processing Technology

13:30-15:30, Sun., Nov.2 **Meeting Room 305**

Session Chair: Sijie Yin

13:30-13:50 Digital Holographic Imaging with Self-Coding Method
*Li Song**

13:50-14:10 A Transformer Model for Underwater Image Enhancement Based on Top-k Channel Sparse Self-Attention and an Improved Gated Feedforward Network
*Xiuzhi Liu; Hao Liang; Zhishuo Ji; Tao Sui**

14:10-14:30 FreqMix: Low-Frequency Component Mixing for Detail-Preserving Data Augmentation in Low-Light Image Enhancement
Hengyi Zhang; Fengshan Zhao; Yujie Wang; Wuyou Zhou; Qin Liu; Takeshi Ikenaga*

14:30-14:50 SPSP Net-based Image Semantic Segmentation
*Yifan Feng**

14:50-15:10 Research on Automatic Image-Based Deskewing Technology for Inspection Camera Preset Positions Using Fuzzy PID Control
Peng Min; Yuan Zhao; Jing Zhou*

15:10-15:30 Adaptive Hypergraph Convolution and Multi-scale Spatial-channel Convolution Fusion Network f or Hyperspectral Image Classification
Shumeng Xu; Qin Xu; Xing Wang; Chun Zheng; Zhihui Liu; Lijuan Tang; Huiqing Jin*

OS12: Organized Session: Advanced Sensing and Intelligent Signal Processing B

16:00-17:40, Sun., Nov.2 **Meeting Room 304**

Session Chair: Xiaoyan Zhao

16:00-16:20 Immunity of SQUID second-order gradiometry to nearsurface interference in subsurface cavity

Fan Song; Zhaohui Zhang; Tianyao Zhang; Xiaoyan Zhao; Zhipeng Gou; Hanyuan Wang; Chunlei Li*

16:20-16:40 Prediction of IDH Mutation Status in Glioma Based on Terahertz Spectroscopy and Deep Learning
Yubo Wu; Wenzheng Shao; Tianyi Bi; Xiaoyan Zhao; Zhaohui Zhang; Tianyao Zhang*

16:40-17:00 Deep learning-based segmentation and recognition of temporomandibular joint disc and condyle images
Rufu Lin; Qiang Sun; Xiaoyan Zhao; Zhaohui Zhang*

17:00-17:20 FFCNN:Low-SNR Wireless Signal Detection Method Based on Fusion Feature CNN
Liang Liang; Dingshan Li; Peitong Li; Bin Yao; Wen Wen; Peng Wang; Zhaohui Zhang*

17:20-17:40 Research on Isotropy of Glioma Pathological Tissues with Terahertz Time-Domain Spectroscopy
Tianyi Bi; Xiaoyan Zhao; Yubo Wu; Zhaohui Zhang; Tianyao Zhang*

OS13: Organized Session: Affective Computing and Human-Robot Interaction for Mental Health A
16:00-17:20, Sun., Nov.2 103 Jinding Hall
Session Chairs: Baoliang Zhong; Weijie Tang

16:00-16:20 A Chinese Multi-label Clinical Corpus Of Patients With Hematologic Malignancies
*Shuang Peng; Xinheng Li; Yuzhe Pan; Zhentao Liu; Fuling Zhou**

16:20-16:40 Cross-task acoustic parameters as predictors of mild cognitive impairment
*Zhong Ding; BaoLiang Zhong; Hui Chen**

16:40-17:00 Research on Virtual Model Control Algorithm for a Single Leg of Bionic Quadruped Robots
Hualin Pang; Weijie Tang; Zihan Huang; Weiqing Jiang*

17:00-17:20 Research on Optimizing the Dynamic Obstacle Avoidance Stability of Robots Based on MPC
Weiqing Jiang; Weijie Tang; Hualin Pang; Jian Luo; Yi Deng*

GS12: General Session: Moving Object Information Processing Technology
16:00-18:00, Sun., Nov.2 104 Tangjia Hall
Session Chair: Minling Zhu

16:00-16:20 AnchDrive: Bootstrapping Diffusion Policies with Hybrid Trajectory Anchors for End-to-End Driving
*Jinhao Chai; Anqing Jiang; Hao Jiang; Shiyi Mu; Zichong Gu; Shugong Xu**

16:20-16:40 Adaptive Attitude Estimation method Based on Minimum Bounding Sphere
*Peng Li; Zhichen Wang; Xinyu Liang; Weilong Ni; Wenan Zhang**

16:40-17:00 A Global Orientation Calibration Method Based on the Fusion of UWB Local Coordinates and Visual Data
Jun Wu; Xiaofei Yang; Yucheng Yang*

17:00-17:20 Hypersonic Vehicle State Time-Series Prediction Based on PG-DGNet
Zhe Wang; Yujing Li; Chuan Zhou; Jian Guo*

17:20-17:40 3DoF Object Pose Prediction with Temporal Guidance Using a CNN-Transformer Network
Weicheng Lu; Yuan Li; Ryuji Fuchikami; Takeshi Ikenaga*

17:40-18:00 WAFMF: Weighted Adaptive Frequency Median Filter for Salt-and-Pepper Noise Denoising
Minling Zhu; Jiahua Yuan; Jun Miao; Maodong He*

GS13: General Session: Object Detection, Recognition and Tracking-B

16:00-17:40, Sun., Nov.2 **Meeting Room 106**

Session Chair: Zuowei Zhang

16:00-16:20 Underwater Target Recognition using Cascaded Neural Network with Fusion Feature
*Fuyan Wang; Jianlei Gao; Pengyuan Qi; Zhe Wang; Xueying Zhang**

16:20-16:40 基于国产算力的双阈值优化机载遥感目标深度开集检测方法
Yikun Wang; Rui Shen; Jiawei Niu; Zuowei Zhang*

16:40-17:00 Research on Entity Recognition Based on the Interaction Information of Character Embeddings and Sentence Embeddings
Yuhang Wang; Yingshun Li; Xian Du; Xiangan Zeng; Xue Sun; Enhui Wu*

17:00-17:20 Gesture Recognition via Transient sEMG Decomposition and Residual Spiking Neural Network
*Lifen Wang; Jinting Ma; Jintao Chen; Yiyun Tan; Naifu Jiang; Guo Dan**

17:20-17:40 Improved YOLOv8 for Gesture Recognition in Human-Machine Interaction Under Complex Backgrounds
Ruowu Wang; Yingshun Li; Xian Du; Xin Liu; Chuanqi Han*

GS14: General Session: Defect/Anomaly/Fault Detection and Processing-B

16:00-17:20, Sun., Nov.2 **VIP Meeting Room 108**

Session Chair: Zengwang Jin

16:00-16:20 Deep Learning Based Real-Time Underwater Vehicle Driver Fatigue Detection
Haiying Wang; Haoliang Wang; Mingkai Yuan; Maozhou Yang; Yixuan Dong; Saniia Karamatovna Shavinskaia*

16:20-16:40 Local Feature-Enhanced LSTM for End-to-End Intelligent Bearing Fault Diagnosis
Wenxu Yang; Hui Xu; Xue Huang; Yan Li; Changkun Han; Mingsong Bai*

16:40-17:00 Uncertainty Support Vector Machine for Rolling Bearing Trustworthy Fault Diagnosis
Tingting Liu; Jing Wang; Meng Zhou; Yanzhu Zhang; Yanyan Hu*

17:00-17:20 Research on intelligent diagnosis of transformer thermal imaging fault based on RESNET and attention mechanism
*Meng Liu; Ying Huang**

GS15: General Session: AI for Science and Culture

16:00-17:20, Sun., Nov.2 **Meeting Room 305**

Session Chair: Shuai Shao

16:00-16:20 Research on Decision Support for Cultural Heritage Conservation Using Agent-based AI Systems with Prompt Engineering—A Case Study of the "Heritage Echo Planet" World Heritage Large Language Model
*Ximeng Wang; Yuzhe Liu; Shuai Shao; Lijie Wang**

16:20-16:40 Building an AI Knowledge Infrastructure for the World Cultural Heritage Vertical: Methodology and Challenges from Local Databases
*Yuzhe Liu; Ximeng Wang; Shuai Shao; Lijie Wang**

16:40-17:00 Sustainable Tourism Water Management Research in Bali Based on Grey Correlation Analysis and Intelligent Optimization Algorithms
*Yanran Wei**

17:00-17:20 Weak N-best POAFD for Second Order Initial Value Problems of Ordinary Differential Equations
Hongfang Bai; Jianwei Dong*

Nov. 3 Monday

OS14: Organized Session: Intelligent unmanned cluster system technology

13:30-15:30, Mon., Nov.3 **101 Fenghuangshan Hall**

Session Chair: Jing Li

13:30-13:50 Adaptive Formation Control of Multi-AUVs with ETM
YuLin Luo; Jing Li; Yang Du*

13:50-14:10 Switched Observer-Based Consensus Control for Multi-ASV Systems under DoS Attacks
Ning Nan; Jing Li; Yang Du*

14:10 -14:30 Adaptive Fault-Tolerant Control of Vehicle Platoon with Sensor Faults
Jian Wu; Junren Gao*

14:30-14:50 Adaptive Deep Neural Control for Fractional-Order Nonlinear Systems
Keyun Chen; Qiong Wu; Jian Wu*

14:50-15:10 Further Results on Adaptive Tracking Control of State-Constrained High-Order Nonlinear Systems
*Chengfu Han; Yangang Yao**

15:10-15:30 Safety-Constrained Distributed Sliding Mode Control for Vehicle Platoons with Improved Prescribed Performance Functions
*Yulin Zhan; Jian Wu; Dewen Cao**

OS15: Organized Session: Embodied Intelligence, Neural Computation and Intelligent Robotics

13:30-15:50, Mon., Nov.3 **102 Hongshulin Hall**

Session Chair: Mingyue Cui

13:30-13:50 A Hierarchical Plane-Quadric Surface Fitting Based Framework for Real-Time LiDAR Point Cloud Compression
Mingyue Cui; Jiakang Zhang; Mingjian Feng; Yuyang Zhong; Yanwei Lu; Chunjie Shu; Yehui Li; Weibing Li*

13:50-14:10 Generative Autonomous Emotionally Intelligent Robot System
Zhijun Zhang; Wentong Wang, Haomin Yu, Yongchang Chen*

14:10-14:30 A Gradient Neurodynamic Solution Enhanced by a Gated Recurrent Unit for Solving Time-Varying Linear Equations With Robotic Application
Weibing Li; Jiajun Luo; Yehui Li; Chengzhu Li*

14:30-14:50 A Novel Shape Estimation Strategy for Continuum Robots Using Multiple Hall-effect Sensors and IMUs
Yehui Li; Yujing Kuang; Mingyue Cui; Weibing Li*

14:50-15:10 An Optimized Control Scheme for Mobile Manipulators Based on Penalty Strategy and Variable-Parameter Neural Dynamics
Zhijun Zhang; Ruixu Jiao*

15:10-15:30 Comparison of Control Barrier Functions and VMEV Methods for Obstacle Avoidance of a Redundant Robot
Lihang Liang; Weibing Li; Yehui Li*

15:30-15:50 Comparative Study of Model-Free Kinematic Control Strategies for Robotic Manipulators
Guanghong Chen; Weibing Li; Yehui Li*

OS16: Organized Session: Advances in Multi-Agent Systems and Visual Perception for Complex Environments

13:30-15:50, Mon., Nov.3 103 Jinding Hall

Session Chair: Licheng Sun

13:30-13:50 AE-BiseNet: Anomaly-enhanced Bilateral Segmentation Network for Industrial Defect Detection
Xinyang Wang, Xinwei Wu, Yongjie Hou, Hongbin Ma, Ying Jin*

13:50-14:10 Multi-scale feature fusion point cloud registration for complex industrial environments
*Zhentao Guo, Minglei Han, Ao Ding, Hongbin Ma**

14:10-14:30 Dynamic Diffusion-based Stochastic Trajectory Prediction with Time-frequency Analysis
Jiaqi Ma, Fuji Fu, Dechen Hao, Jinfu Yang

14:30-14:50 Design and Application of Grinding Trajectory Planning Algorithm for Casting Grinding Robot
Xin Wang, Hongbin Ma, Jinyue Bian, Yanhuan Jiang, Yiyi Yin*

14:50-15:10 Multi-Element Localization and Spatial Mapping in Hybrid Wargaming using an Integrated Hierarchical Approach
*Minglei Han, Xinwei Wu, Tianhao Wang, Hui Chen, Zhentao Guo, Hongbin Ma**

15:10-15:30 Mathematical modeling of anti-drone swarm warfare based on "Spider Web Operation"
Chang Xu, Minzhe Fan, Yiran Chen, Xinwei Wu, Hongbin Ma, Bi Wu

15:30-15:50 Attention-Enhanced Hybrid Graph Neural Network for 3D Localization of Rock Fracture Events
*Bingchen Li, Jianing Sun, Heyao Li, Chengzhi Zhang, Weixian Teng, Haoyuan Song, Xianrui Ji, Zhibin Yao**

OS17: Organized Session: Feedback control design for distributed parameter systems

13:30-15:10, Mon., Nov.3 104 Tangjia Hall

Session Chair: Kai Liu

13:30-13:50 Adaptive Output Feedback Stabilization for an Unstable Wave Equation with Unknown Parameter
*Haili Du; Hongyinping Feng**

13:50-14:10 Output Feedback Stabilization for Two-dimensional Nonlinear Parabolic Equation
*Kai Liu; Zhongjie Han**

14:10-14:30 Disturbance rejection and stabilization for piezoelectric beam equation
*Baowei Feng; Huacheng Zhou**

14:30-14:50 Backstepping Stabilization of Stochastic Hyperbolic PDE-ODE Systems
Xuejiao Sun; Junmin Wang; Kaijing Lv*

14:50-15:10 Dual-Feedback GAN for Antiviral Peptide Generation
Song Tao; Junjie Li; Donghua Li; Zuohang Jiang

OS18: Organized Session: Data Analytics and Optimization for Smart Industry
13:30-15:10, Mon., Nov.3 105 Qi'ao Hall
Session Chairs: Te Xu; Zhiming Dong

13:30-13:50 Multi-objective optimization algorithm for integrated slab matching and hot rolling production scheduling with uncertainty
*Yufei Lu**

13:50-14:10 A Method for Solving Topology Optimization Problems Using a Graph-based Encoded Differential Evolution Algorithm
*Hongxu Pei**

14:10-14:30 Multi-objective Multi-task Optimization Research on Scheduling in Aero-engine Assembly Workshop
Huimin Du, Haohong Xu*

14:30-14:50 A Collaboration Optimization Framework for Complex Semiconductor Equipment Scheduling based on Mixed-Integer Linear Programming and Neighborhood Search
*Sen Li; Xiangyan Liu; Kunlong Sang; Te Xu**

14:50-15:10 Learning Informed Search Adaptive Knowledge Transfer in Evolutionary Multi-Objective Multi-Task Optimization
Zhiming Dong; Huimin Du; Kai Fu; Haohong Xu*

OS19: Organized Session: AI for Complex Systems & Interdisciplinary Applications
13:30-15:10, Mon., Nov.3 106 Meeting Room
Session Chair: Jianhua Lu

13:30-13:50 Physics-informed neural networks for two-phase flow problems in porous media
*Qin Lou**

13:50-14:10 An improved physics-informed neural network for phase field equation: applications in fluid interfacial problems
*Haoran Hu**

14:10-14:30 Solving Forward-Backward SDEs via Regularized Neural Networks
*Xinyu Wei; Jingtao Shi**

14:30-14:50 Formal System of Rongzhi Learning: A Category Theory-Based Unified Framework for Language-Databases and Cross-Modal Human-Computer Collaboration
Shunpeng Zou; Xiaohui Zou

14:50-15:10 Blockchain-Assisted CP-ABE with Revocation for Vehicular Access Control
Chunming Wu; Yi Lu; Jianhao Qin; Zongze Liu; Jiaxin Yan

Introduction to Distinguished Guests

Zhuhai Venue

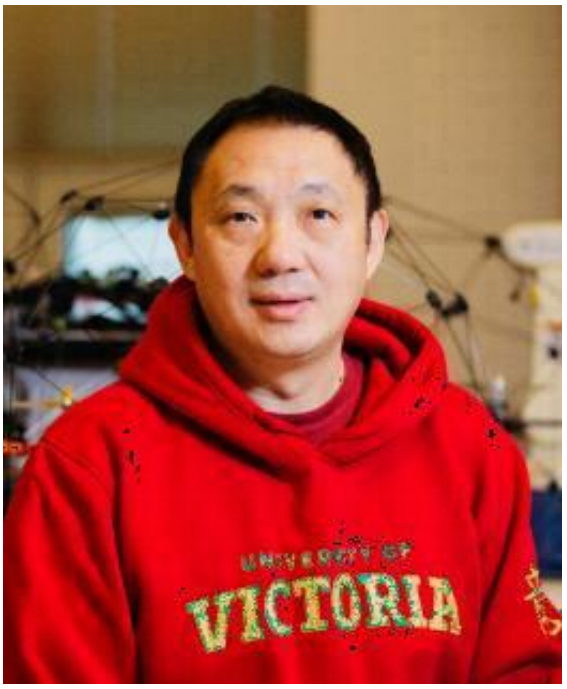
Prof. Lei Guo

Lei Guo is a professor at the Academy of Mathematics and Systems Science, Chinese Academy of Sciences (CAS). He is a Fellow of IEEE, Member of CAS, Fellow of the Academy of Sciences for the Developing World (TWAS), Foreign Member of the Royal Swedish Academy of Engineering Sciences, and Fellow of the International Federation of Automatic Control (IFAC). In 2014, he was awarded an honorary doctorate by the Royal Institute of Technology (KTH), Sweden. In 2019, he was awarded the Hendrik W. Bode Lecture Prize by the IEEE Control Systems Society "for fundamental and practical contributions to the field of adaptive control, system identification, adaptive signal processing, stochastic systems, and applied mathematics". His current research interests include adaptive (learning, filtering, control and games) theory of stochastic systems, control of uncertain nonlinear systems, game-based control systems, multi-agent complex systems, and man-machine integration systems, etc.

Prof. Witold Pedrycz

Witold Pedrycz (IEEE Life Fellow) is Professor in the Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Canada. He is also with the Systems Research Institute of the Polish Academy of Sciences, Warsaw, Poland. Dr. Pedrycz is a foreign member of the Polish Academy of Sciences and a Fellow of the Royal Society of Canada. He is a recipient of several awards including Norbert Wiener award from the IEEE Systems, Man, and Cybernetics Society, IEEE Canada Computer Engineering Medal, a Cajastur Prize for Soft Computing from the European Centre for Soft Computing, a Killam Prize, a Fuzzy Pioneer Award from the IEEE Computational Intelligence Society, and 2019 Meritorious Service Award from the IEEE Systems Man and Cybernetics Society. His main research directions involve Computational Intelligence, Granular Computing, and Machine Learning. Professor Pedrycz serves as an Editor-in-Chief of ***WIREs Data Mining and Knowledge Discovery*** (Wiley), and Co-editor-in-Chief of ***J. of Data Information and Management*** (Springer).

Prof. Yang Shi



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

On teaching and mentorship, Dr. Shi received the University of Saskatchewan Student Union Teaching Excellence Award in 2007, and the Faculty of Engineering Teaching Excellence Award in 2012 at the University of Victoria (UVic), and the 2023 REACH Award for Excellence in Graduate Student Supervision and Mentorship. On research, he is the recipient of the JSPS Invitation Fellowship (short-term) in 2013, the UVic Craigdarroch Silver Medal for Excellence in Research in 2015, the 2017 IEEE Transactions on Fuzzy Systems Outstanding Paper Award, the Humboldt Research Fellowship for Experienced Researchers in 2018; CSME Mechatronics Medal (2023); IEEE Dr.-Ing. Eugene Mittelmann Achievement Award (2023); the 2024 IEEE Canada Outstanding Engineer Award. He is IFAC Council Member; VP on Conference Activities of IEEE IES and the Chair of IEEE IES Technical Committee on Industrial Cyber-Physical Systems. Currently, he is Editor-in-Chief of IEEE Transactions on Industrial Electronics (2025/01-); he also serves as Associate Editor for Automatica, IEEE Transactions on Automatic Control, Annual Review in Controls, etc.

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

Prof. Shuxiang Guo

Shuxiang Guo (Fellow, IEEE) is currently the Chair Professor with Southern University of Science and Technology, Shenzhen, China. He is also the Chair Professor with Beijing Institute of Technology, Beijing, China. Prof. Guo has a fellowship of the Engineering Academy of Japan. His Ph.D. was obtained at the Nagoya University, Japan (1995). His current research interests include micro robotics and mechatronics, micro robotics system for minimal invasive surgery, micro catheter system, micro pump, and smart material (SMA, ICPF) based on actuators. He has published about 500 refereed journal and conference papers. He also received the Chang Jiang Professorship Award from Ministry of Education of China in 2005 and was offered Thousand-Elite-Project in China. He is the founding chair for IEEE International Conference on Mechatronics and Automation. And he is the editor in chief for International Journal of Mechatronics and Automation.

Prof. Yan Zhang

Yan Zhang, Professor at University of Electronic Science and Technology of China (UESTC), IEEE Fellow, IET Fellow, and Clarivate Analytics "Highly Cited Researcher." Elected member of MAE, DKNVS, and NTVA. His recent research focuses on next-generation wireless networks and intelligent and secure Internet of Things (IoT). His work has been cited over 53,000 times with an H-index of 118. He is now serving as Co-Editor-in-Chief of IEEE Transactions on Industrial Informatics (IEEE TII), Area Editor for IEEE Transactions on Green Communications and Networking (IEEE TGCN), Senior Editor for IEEE Systems, and editor of multiple IEEE Transactions/Magazines and Chinese scientific journals.

Prof. Liqun Han

Liqun Han, Professor and Ph.D. Supervisor at Beijing Technology and Business University; former Dean of the School of Information Engineering; Visiting Professor at University of Science and Technology Beijing, Beijing University of Posts and Telecommunications, and Army Armored Force Academy.

She has long been engaged in teaching and scientific research in the field of artificial intelligence. Focusing on technical challenges in industries such as industry, aerospace, transportation, and agriculture, she has completed a number of key scientific and technological research projects. She has published over 150 academic papers, many of which have been indexed by renowned international academic databases; published 27 academic works and teaching materials of various types; presided over and participated in more than 40 scientific research and teaching research projects; obtained 8 national invention patents; and won 1 Wu Wenjun Artificial Intelligence Science and Technology Award (Second Class).

She holds the following academic positions: Vice President of the 5th/6th Councils of the Chinese Association for Artificial Intelligence (CAAI); Honorary Director of the Intelligent Products and Industry Working Committee; Vice Chairman of the Robotics Working Committee of the National School Sports Federation under the Ministry of Education; Standing Director of the Chinese Society of Educational Development Strategy; and Honorary Chairman of the Professional Committee on Artificial Intelligence and Robotics Education.

She is also a Fellow of the Academy of Engineering and Technology for the Developing World (AETDEW), a Fellow of the International Academy of Information and Systems (IAIS), a Foreign Fellow of the ASEAN Academy of Engineering and Technology (AAET), and one of the first batch of Fellows of the Chinese Association for Artificial Intelligence (CAAI).

Prof. Yasufumi Takama

Prof. Yasufumi Takama received a Dr. Eng. Degree from the University of Tokyo, Tokyo, Japan in 1999. He was a JSPS (Japan Society for the Promotion of Science) Research Fellow from 1997 to 1999. From 1999 to 2002 he was a Research Associate at Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology in Japan. From 2002 to 2005, he was an Associate Professor at Department of Electronic Systems and Engineering, Tokyo Metropolitan Institute of Technology, Tokyo, Japan. From 2005 to 2013, he was an Associate Professor at Faculty of Systems Design, Tokyo Metropolitan University, Tokyo, Japan. Since 2014, he has been a Professor at Faculty of Systems Design, Tokyo Metropolitan University, Tokyo, Japan. He also participated in PREST (Pre-cursory Research for Embryonic Science and Technology), JST (Japan Science and Technology Corporation) from 2000 to 2003. His current research interest includes information recommendation, Web intelligence, information visualization, and human in the loop. Dr. Takama is a member of IEEE, ACM, IEICE (Institute of Electronics, Information and Communication Engineers), JSAI (Japanese Society of Artificial Intelligence), and IPSJ (Information Processing Society of Japan).

Prof. Zengguang Hou

Zengguang Hou is a professor at the Institute of Automation, Chinese Academy of Sciences (CAS) and IEEE/CAA Fellow. He is a recipient of the National Science Fund for Distinguished Young Scholars and was selected for the National Ten Thousand Talents Program. He serves as Vice President of the Chinese Association of Automation (CAA), Director of the CCF Technical Committee on Intelligent Robotics, and Deputy Director of the Intelligent Rehabilitation Committee of the Chinese Association of Rehabilitation Medicine. Additionally, he holds the position of Vice President of the Asia-Pacific Neural Network Society (APNNS) and serves on the editorial boards of several prestigious journals, including IEEE Transactions on Cybernetics, Neural Networks, and IEEE Transactions on Neural Networks and Learning Systems. Prof. Hou has been honored with numerous awards, including the Second Prize of the National Natural Science Award, the First Prize of the Beijing Natural Science Award, and the Yang Jiachi Science and Technology Award. Internationally, he received the Dennis Gabor Award from the International Neural Network Society (INNS), recognizing his outstanding contributions to the field.

Prof. Xinzhu Sang

Xinzhu Sang is a Distinguished Professor at Beijing University of Posts and Telecommunications, and a recipient of the National Talent Program. He serves as a member of the Electronic Information Science and Technology Committee of the Ministry of Industry and Information Technology (MIIT), and the Secretary-General and Deputy Director of the Holography and Optical Information Processing Committee of the Chinese Optical Society. His research focuses on glasses-free 3D light-field display and novel photonic devices. He has presided over more than 30 major research projects, including Key Projects of the National Natural Science Foundation of China and the National Key Research and Development Program. He has published over 350 academic papers and won more than 100 invention patents. His research achievements have been featured in prominent exhibitions such as "The Great Reform – Celebrating the 40th Anniversary of Reform and Opening-Up Large-Scale Exhibition," "High-Tech Equipment Exhibition," and so on. He has been honored with "2017 Outstanding Teacher of Beijing" and "2016 Ethical Model Pioneer of Beijing." His won the 2023 Second Prize of the National Technology Invention Award, the 2022 First Prize of the Ministry of Education Technology Invention Award, the 2021 First Prize of the Beijing Science and Technology Award, and so on.

Prof. Shing-Chi Cheung

Professor Shing-chi Cheung from the Hong Kong University of Science and Technology (HKUST) specializes in leveraging advanced testing methodologies, artificial intelligence technologies, and empirical research techniques to identify, diagnose, and repair faults in reliable and intelligent software systems. He is a Chair Professor of Computer Science and Engineering and was conferred the title of IEEE Fellow. Professor Cheung and his research team have been working on ensuring the quality of software systems using methodologies adopted by both academia and industry. In 1998, Professor Cheung introduced Metamorphic Testing, which has since emerged as a leading testing methodology in artificial intelligence system testing. Recently, his team has been exploring the application of generative AI for software development and maintenance.

Prof. C. L. Philip Chen

C. L. Philip Chen is the Chair Professor and Dean of the School of Computer Science and Engineering, South China University of Technology. Prior to this position he worked in the US in two different universities as a tenured professor, department chair and associate dean, and in University of Macao as the dean. He is a Life Fellow of IEEE, Fellow of AAAS, IAPR, CAA, CAAI, and HKIE; a member of Academia Europaea (AE), a member of European Academy of Sciences and Arts (EASA), and a Full Foreign Member of Russia Academy of Engineering (FFM-RAE). He received the IEEE Norbert Wiener Award in 2018, for his contribution in systems and cybernetics, and machine learnings, the IEEE Joseph G. Wohl Outstanding Career award, Wu Wenjun Outstanding Contribution award from Chinese AI Association, and 2016 Outstanding Electrical and Computer Engineers Award from his alma mater, Purdue University.

He is a highly cited researcher by Clarivate Analytics from 2018-2023 and is listed in Stanford University/Elsevier World's Top 2% Scientists in "Lifetime Scientific Impact" and in "Annual Scientific Impact (951 world-rank in 2024)" Rankings since 2019. His current research interests include cybernetics, systems, and computational intelligence. For his contribution in these research areas, he received two times best transactions paper award from IEEE Transactions on Neural Networks and Learning Systems for his papers in 2014 and 2018 and received three-time Macau natural science award. In professional service, he was the Editor-in-Chief of the IEEE Transactions on Cybernetics, the Editor-in-Chief of the IEEE Transactions on Systems, Man, and Cybernetics: Systems, the President of IEEE Systems, Man, and Cybernetics Society. Currently, he is the director of two Guangdong Key Labs, the director of a research lab funded by the Ministry of Education, a Vice President of Chinese Association of Automation, and Co-President of Guangdong AI Industrial Association.

Prof. Kazuhiko Kawamoto

Prof. Kazuhiko Kawamoto received his B.E., M.E., and Ph.D. degrees from Chiba University, Japan, in 1997, 1999, and 2002, respectively. From 2002 to 2005, he was an Assistant Professor at Tokyo Institute of Technology, and from 2005 to 2009, an Associate Professor at Kyushu Institute of Technology. In 2009, he joined Chiba University as an Associate Professor at the Institute of Media and Information Technology, and he is currently a Professor at the Graduate School of Informatics. He also serves as Chair of the Department of Mathematics and Information Science within the Graduate School of Science and Engineering at Chiba University. His research interests include computer vision, deep learning, and reinforcement learning. He has published papers in top-tier conferences such as AAAI and CVPR, and his research has been recognized with several awards at academic conferences. His recent work focuses on the interpretability, robustness, and transferability of deep learning models. He is a member of IEEE, SOFT (Japan Society for Fuzzy Theory and Intelligent Informatics), IEICE (Institute of Electronics, Information and Communication Engineers), JSAI (Japanese Society for Artificial Intelligence), and IPSJ (Information Processing Society of Japan).

Prof. Jianqing Li

Jianqing Li is currently a Professor and an Assistant Director of School of Computer Science and Engineering. He received the Ph. D. degree from the Beijing University of Posts and Telecommunications, Beijing, China, in 1999. From 2000 to 2002, he was a Visiting Professor with the Information and Communications University, Daejeon, South Korea. From 2002 to 2004, he was a Research Fellow with Nanyang Technological University, Singapore. He joined the Macau University of Science and Technology, Macau, China, in 2004. He won Third Prize in Technology Invention of 2016 and 2018 Macao Science and Technology Awards, respectively. He won Third Prize in Natural Science of 2022 Macao Science and Technology Awards. His main research interests include wireless networks, fiber sensors, and the Internet of Things.

Prof. Ching-Chih Tsai

Ching-Chih Tsai received the Diploma in the Department of Electrical Engineering from the National Taipei University of Technology, Taipei City, Taiwan Province, China, in 1981, the M.S. degree in the Institute of Control Engineering from National Chiao Tung University, Taiwan Province, China, in 1986, and the Ph. D degree in the Department of Electrical Engineering from Northwestern University, Evanston, IL, USA, in 1991. He is currently a Life Distinguished Professor in the Department of Electrical Engineering at National Chung Hsing University (NCHU), Taiwan Province, China. He served as Dean of College of Electrical Engineering and Computer Science, NCHU, since August 2024. He has published and co-authored more than 700 technical articles and received many awards and recognitions from international conferences supported by IEEE. His current research interests include intelligent control, smart mobile robotics and automation intelligence with their applications to service and industrial robots, semiconductor manufacturing and AI-based control systems. He is a Fellow of IEEE, IET, CACS, RST, and TFSA.

Prof. Yuanqing Xia

Yuanqing Xia, male, member of the Communist Party of China, and an expert in the field of control science and engineering. He is a recipient of the National Science Fund for Distinguished Young Scholars, a Changjiang Scholar Chair Professor of the Ministry of Education, a leading talent of the National "Ten Thousand Talents Plan," an IEEE Fellow, a CAA Fellow, and an expert enjoying the special allowance from the State Council. He currently serves as the president of Zhongyuan University of Technology and a chair professor at Beijing Institute of Technology. He is also a member of the 8th Academic Degree Committee of the State Council, a member of the Big Data Expert Committee of the China Computer Federation, the vice chairman of the Internet of Things Working Committee of the China Instrument and Control Society, the chairman of the Cloud Control and Decision-making Professional Committee of the Chinese Command and Control Society, and the deputy director of the National Key Laboratory of Intelligent Information Processing in Space. He has long been engaged in research on information processing and control of multi-source information complex systems, aircraft control, coordinated control of unmanned mobile platforms, cross-coordinated control and intelligent decision-making of multi-agent systems in air, space, ground, and sea integrated network environments, and cloud control and decision-making. He has undertaken numerous scientific research projects at various levels, including the National Key Research and Development Program, the National Natural Science Fund Key Projects, and the 973 Program. He was the first in the world to propose the concept of "cloud control" and established the relevant theoretical and technical system, empowering manned and unmanned systems in the fields of sky, space, ground, and sea, as well as intelligent manufacturing, significantly improving the quality of perception, decision-making, and control. He has won one second prize of the National Science and Technology Progress Award, two second prizes of the Ministry of Education Natural Science Award, three second prizes of the Beijing Municipal Science and Technology Award, one third prize of the National Defense Science and Technology Progress Award, one first prize and one second prize of the Wu Wenjun Artificial Intelligence Natural Science Award, one first prize of the China Automation Society Natural Science Award, one first prize of the China Automation Society Science and Technology Progress Award, and one first prize of the Chinese Command and Control Society Science and Technology Award. He has published more than 1000 academic papers, of which over 800 have been indexed by SCI, applied for more than 100 invention patents, published 22 English monographs and 3 Chinese monographs, and his papers have been cited more than 38000 times in total. Since 2014, he has been continuously selected into the Elsevier list of highly cited scholars in China and has been included in the Stanford list of the top 2% of the world's leading scientists in terms of lifelong scientific impact. He has been honored with titles such as "The Most Beautiful Science and Technology Worker in Henan Province in 2024."

Prof. Qing Li

Qing Li is a second-level professor and doctoral supervisor at the University of Science and Technology Beijing. He is also a member of the university's Academic Committee and the Teaching Supervision Group. He enjoys the special government allowance from the State Council and is the leader of the National First-Class Undergraduate Major and First-Class Undergraduate Course. He has been honored as a Distinguished Teaching Master in Beijing Higher Education Institutions, a Role Model for Teaching and Educating in the Beijing Education System, a Master of Ideological and Political Education in Beijing, an Outstanding Teacher in Beijing, a recipient of the Baosteel Outstanding Teacher Award, an Outstanding Undergraduate Teaching Manager in Beijing Universities, an Outstanding Party Affairs Worker in Beijing Universities, and an Advanced Worker for Summer Social Practice of Capital College Students. He also serves as a collaborative member of the Ministry of Education's Teaching Steering Committee for Automation in Higher Education Institutions, a member of the Education Committee of the Chinese Automation Society and the Chinese Association for Artificial Intelligence, a standing director and vice chairman of the Special Committee on Artificial Intelligence and Robot Education of the China Education Development Strategy Society, an expert in the certification of Electronic Information and Electrical Engineering majors for the Chinese Engineering Education Professional Certification Association, and an expert for the Ministry of Education's Review and Assessment.

Prof. Shuxue Ding

Shuxue Ding is a professor and doctoral supervisor at the School of Artificial Intelligence, Guilin University of Electronic Technology. He obtained his Ph.D. from the Tokyo Institute of Technology, Japan, in 1996. In 2014, he was selected for the Tianjin Thousand Talents Program (Short-Term Innovation). Since 2015, he has served as a guest professor and doctoral supervisor at the School of Optical and Electronic Information Engineering, Nankai University. He previously held positions as a tenured professor at the University of Aizu, Japan, where he also served as the Director of the Cognitive Science Research Laboratory, Head of the Department of Computer and Systems Engineering, and a member of the University's Education and Research Council. For many years, he was a visiting researcher at the Brain Science Research Center of the Institute of Physical and Chemical Research (RIKEN) in Japan. He is a technical committee member and one of the key founders of the IEEE Systems, Man & Cybernetics Society, Awareness Computing. From March 2019 to June 2022, he was appointed as the founding Dean of the School of Artificial Intelligence at Guilin University of Electronic Technology, working full-time in China. He also serves as the Director of the Guilin Jinghua High-Tech Industry Research Institute.

His research primarily focuses on artificial intelligence, machine learning, intelligent metamaterials/metasurfaces, signal and image processing, neural computing, and big data. He is currently leading a National Natural Science Foundation of China (NSFC) general project: "Nonlinear Frame Representation, Dictionary Learning, and Non-Gradient Backpropagation Learning Algorithms for Neural Networks," as well as a Guangxi Major Science and Technology Project: "Construction and Application Research of Artificial Intelligence Hybrid Architecture Computing Platform." During his time in Japan, he led four research projects funded by the Japan Society for the Promotion of Science (JSPS), which are equivalent to China's National Natural Science Foundation projects. He has published over 200 papers, including more than 120 journal articles, among which over 90 are SCI-indexed journal papers and nearly 30 are published in prominent IEEE journals such as IEEE Internet of Things Journal, IEEE Transactions on Neural Networks and Learning Systems, and IEEE Transactions on Signal Processing.

Prof. Lin Wang

Wang Lin is a professor and doctoral supervisor at Shanghai Jiao Tong University and a Shanghai Shuguang Scholar. Her research focuses on the analysis and control of networked systems and the scheduling optimization of large-scale cluster systems. She has published over 60 SCI journal papers. She was awarded the First Prize of Natural Science Award by the Chinese Association of Automation in 2022, the Second Prize of Natural Science Award by the Shanghai Science and Technology Award in 2022, the Outstanding Scientific and Technological Paper Award in the Field of Electronics and Information by the Chinese Institute of Electronics in 2020, and the Best Theoretical Paper Award at the 13th World Congress on Intelligent Control and Automation. She currently serves as Vice Chair of the IFAC Technical Committee on Large Scale Complex Systems, Deputy Director of the Committee on Complex Networks and Complex Systems of the Chinese Society for Industrial and Applied Mathematics, Associate Editor of Systems & Control Letters, Young Editor of J. Systems Science & Complexity, and Editorial Board Member of the Journal of Systems Science and Mathematics and the Journal of Command and Control.

Beijing Venue

Prof. Jinhua She

Academic Positions:

Professor at Tokyo University of Technology (Japan); Distinguished Expert at China University of Geosciences (Wuhan, China).

Professional Memberships:

IEEE Fellow; Senior Member of the Institute of Electrical Engineers of Japan (IEEJ); Member of the Society of Instrument and Control Engineers (SICE, Japan), the Japan Society of Mechanical Engineers (JSME), the Asian Control Association (ACA), and the Chinese Association of Automation (CAA).

Leadership Roles:

Current Member of the IEEE Industrial Electronics Society (IES) Administrative Committee (AdCom); Member of the Advisory Board of the IEEE Hyperintelligence Committee.

Served as the Representative of IEEE IES Region 4 (overseeing 6 technical committees) from 2019 to 2021; Chair of the Technical Committee on Human Factors from 2018 to 2021.

Co-founder and Co-Chair of the China-Japan International Workshop on Information Technology and Control Applications.

Editorial Roles:

Associate Editor for IEEE Transactions on Industrial Electronics and IEEE/ASME Transactions on Mechatronics; Member of the Technical Committee on Control Theory of the CAA; Member of the Paper Committee of IEEJ.

Research Areas:

Control theory and its applications, repetitive control, active disturbance rejection, high-precision control of mechatronic systems, and rehabilitation robots.

Awards & Achievements:

Co-recipient of the IFAC (International Federation of Automatic Control) Outstanding Paper Award in Control Engineering Practice in 1999 (together with Professor Min Wu and Professor Michio Nakano).

Authored 5 monographs, 5 textbooks, and 1 translated work; published over 500 academic papers; holds 16 authorized invention patents.

Prof. Zhaohui Zhang

Zhaohui Zhang is a professor at the School of Automation, University of Science and Technology Beijing, a Beijing Distinguished Teaching Master, and the director of the Beijing Engineering and Technology Research Center for Industrial Spectroscopic Imaging. He also serves as the vice chairman of the Beijing Automation Society. His research focuses on terahertz wave detection, extremely weak magnetic quantum detection, and the development of industrial measurement equipment. Addressing the information perception needs of multiple industries, he has undertaken six National Key R&D Programs and National Natural Science Foundation projects, as well as numerous corporate R&D projects. He has obtained more than 30 invention patents and received five provincial and ministerial level awards. He has published over a hundred papers and has been selected multiple times as a Highly Cited Scholar in China by Elsevier.

Prof. Kang-Zhi Liu

Kang-Zhi Liu graduated from Northwestern Polytechnical University in 1984 and obtained a Ph.D. from Chiba University in 1991. Since then, he joined Chiba University and is now a full professor at the Department of Electrical and Electronic Engineering. His research interests include robust control, machine learning and their applications to industrial systems. Dr. Liu was awarded four academic awards by SICE and is a Fellow of SICE.

Prof. Long Cheng

Dr. Long Cheng is a Research Fellow and Doctoral Supervisor at the Institute of Automation, Chinese Academy of Sciences (CAS), and a Position Professor at the University of Chinese Academy of Sciences. He is an IEEE/IET/CAA Fellow.

Currently, he serves as the Chair of the IEEE Computational Intelligence Society (CIS) Beijing Chapter and is an Associate Editor for domestic and international journals including *IEEE Transactions on Cybernetics*, *IEEE Transactions on Automation Science and Engineering*, *Science China Technological Sciences*, and *Acta Automatica Sinica*.

Dr. Cheng has been awarded funding from the National Science Fund for Distinguished Young Scholars and the Beijing Municipal Science Fund for Distinguished Young Scholars. He also received the Second-Class Award of the National Natural Science Award in 2017. His research interests include robotics and intelligent control.

Prof. Minyi Huang

Minyi Huang received the B.Sc. degree from Shandong University, Jinan, Shandong, China, in 1995, the M.Sc. degree from the Institute of Systems Science, Chinese Academy of Sciences, Beijing, in 1998, and the Ph.D. degree from the Department of Electrical and Computer Engineering, McGill University, Montreal, QC, Canada, in 2003, all in systems and control. He was a Research Fellow first at the University of Melbourne, Australia, from February 2004 to March 2006, and then at the Australian National University, Canberra, from April 2006 to June 2007. He joined the School of Mathematics and Statistics, Carleton University, Ottawa, ON, Canada in 2007, where he is now a professor. His research interests include mean field stochastic control and dynamic games, multi-agent control and computation in distributed networks with applications. He is a Fellow of IEEE and a member of SIAM.

Prof. Zhongjing Ma

Ma Zhongjing, Professor and Doctoral Supervisor at the School of Automation, Beijing Institute of Technology (BIT). His current research focuses on intelligent control, optimization, game theory, and their applications in fields such as intelligent unmanned systems and integrated energy systems. In recent years, he has undertaken a number of scientific research projects, including those funded by the National Natural Science Foundation of China (NSFC), the International Cooperation Special Project of the Ministry of Science and Technology, the Beijing Natural Science Foundation, and the State Grid Corporation of China. He leads his team in developing intelligent unmanned aerial vehicle (UAV), unmanned underwater vehicle (UUV), and bionic robotic fish platform systems based on multi-sensory information fusion. These systems enable path planning, target recognition, and formation coordination of heterogeneous groups in complex scenarios, and have been applied to autonomous line inspection, fault diagnosis, and other tasks in the power industry and other sectors. He has published more than 80 academic papers in IEEE Transactions and other prestigious journals.

Prof. Jun Liu

Jun Liu is a Professor of Applied Mathematics and a Canada Research Chair at the University of Waterloo, where he directs the Hybrid Systems Lab. He received his B.S. in Applied Mathematics from Shanghai Jiao-Tong University, M.S. in Mathematics from Peking University, and Ph.D. in Applied Mathematics from the University of Waterloo. After a Postdoctoral Fellowship at Caltech, he was a Lecturer at the University of Sheffield before joining Waterloo in 2015. His research focuses on hybrid systems, control theory, optimization, and machine learning, with applications in robotics and cyber-physical systems. He has received a Marie-Curie Career Integration Grant, a Canada Research Chair (2017–2027), an Ontario Early Researcher Award, and the CAIMS/PIMS Early Career Award. His best paper awards include the Zhang Si-Ying Outstanding Youth Paper Award, the IFAC Nonlinear Analysis: Hybrid Systems (NAHS) Paper Prize, and the Oded Maler Prize (FORMATS Best Paper). Dr. Liu is a senior member of IEEE, a member of SIAM, and a lifetime member of CAIMS, and has served on editorial boards and program committees of several journals and conferences in control and systems theory.

Dr. Yaodong Pan

Dr. Yaodong Pan is a Researcher at Tokyo University of Technology, Japan. He previously served as a Lecturer at the National University of Defense Technology (Changsha, China), an Associate Professor at Tokyo Denki University (Japan), and a Senior Staff Engineer at Honeywell Inc. (Canada).

His main research areas include control theory and its applications, variable structure control, and robotics. He has published over 100 academic papers in conferences and journals.

Prof. Yang Zhang

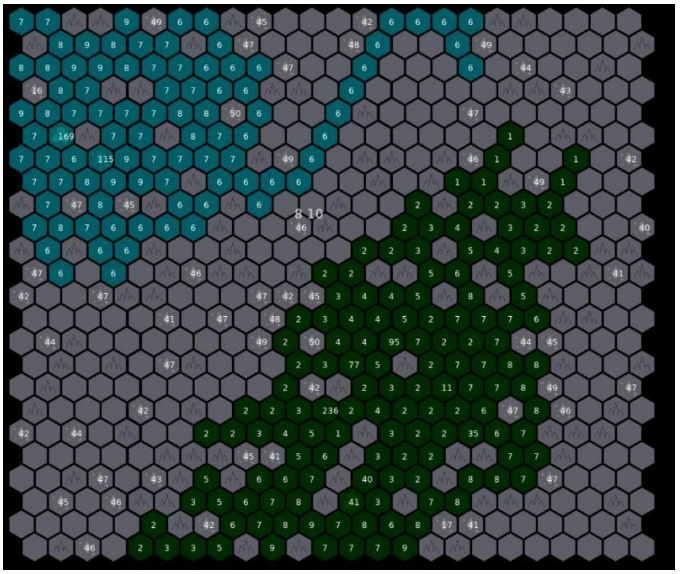
Yang Zhang is an associate professor and master's degree supervisor at Beijing University of Chemical Technology. He graduated with a bachelor's degree from the School of Computer Science at Beihang University in 2014 and obtained his Ph.D. from the same school in 2020, where he was awarded the title of Outstanding Doctoral Graduate. He has long been engaged in theoretical and methodological research as well as application system development in the fields of smart cities, artificial intelligence, and machine vision. He has published more than 20 papers in top journals and conferences in these fields. He currently serves as a director of the Beijing Automation Society and as a reviewer for top journals such as IEEE TIP, IEEE TCSVT, IEEE TII, IEEE JIOT, IEEE PR, and IJCV. He has been selected for the Beijing Municipal Science and Technology Association's Youth Talent Support Program for 2021-2023 and was recognized as a Young Reserve Talent at Beijing University of Chemical Technology in 2020. He has presided over one National Natural Science Foundation of China (NSFC) Youth Science Fund and one sub-project of the National Key R&D Program. He has also participated in two NSFC key projects and three topics of the National Key R&D Program.

Introduction to Artificial Intelligence Challenge

Held outside of the sessions, the "IWACIII 2025 Artificial Intelligence Challenge" (hereinafter referred to as the "AI contest"), hosted and organized by the organizing committee of the 9th International Workshop on Advanced Computational Intelligence and Intelligent Informatics (IWACIII 2025), is scheduled for November 2, 2025.

Centered on the theme of "Intelligent Gaming Driving Innovation, Practical Application Empowering Industrial Upgrading," the AI contest focuses on the design and implementation of AI algorithms in complex adversarial scenarios. It comprehensively evaluates participating teams on their comprehensive capabilities in key areas such as environmental perception, strategic planning, real-time decision-making, and autonomous learning, aiming to select and incubate outstanding results with industrial potential. A total of 22 teams will participate in the contest.

The AI contest will uniformly utilize the "Commander" platform, a real-time strategy gaming platform independently developed by Beijing Institute of Technology. This platform integrates wargaming simulation and real-time decision-making mechanisms. Participating AIs are required to accomplish multi-task gaming objectives-such as resource expansion, city capture, troop deployment, and defensive arrangements-in dynamic adversarial environments. By randomly generating multiple maps and employing a multi-round scoring system, the platform systematically evaluates the robustness, adaptability, and optimal strategy-solving capabilities of the AIs.



Introduction to Innovation Product Roadshow

This carefully curated "Innovation Product Roadshow" represents a dedicated platform we have built to showcase the power of innovation. As a highlight of the IWACIII 2025, this session brings together elite representatives from industry, academia, research, and investment circles, fostering collaboration to accelerate the transformation and application of groundbreaking achievements.

The roadshow will feature a dynamic series of presentations from selected innovators and teams, who will demonstrate their cutting-edge products and technologies. Industry experts and investors will provide live commentary, offering tailored guidance and strategic advice to help projects refine their positioning and enhance their value. Outstanding projects will have the opportunity to connect with local government representatives to explore policy support and potential pathways for implementation, bridging the "last mile" from idea to industry. Exceptional roadshow projects will be honored with awards issued by the conference, boosting their visibility and impact within the field.

The session is designed to bridge the gap between promising ideas and real-world impact, driving meaningful connections and advancing the adoption of novel solutions.

We invite all participants to join this vibrant gathering, where the brightest minds and most promising technologies converge in Zhuhai to shape the future of the industry.

Introduction to Sponsoring Companies

YGSOFT Inc.

(https://www.ygsoft.com/)

YGSOFT Inc. was founded in 1998 and was listed on the Shenzhen Stock Exchange in 2006 (SZ: 002063). It is a mainstream provider of information technology, products, and services in the fields of enterprise management, energy interconnection, and social services in China.

YGSOFT is a "national key software enterprise encouraged by the state." It has dual headquarters in Beijing and Zhuhai, and has established four major R&D centers, one post-doctoral scientific research workstation, and four cutting-edge technology laboratories. The company is also a Guangdong Provincial Enterprise Technology Center and a Guangdong Provincial Engineering Technology Research Center. As a trusted brand in the software industry, YGSOFT places high importance on independent control and innovation. For several consecutive years, its R&D investment has accounted for more than 20% of its revenue. It has built a lean R&D system and an "end-to-end, full-process, and all-round" trustworthy and innovative ecosystem, and has passed the CMMI5 software maturity certification. The company adheres to an open and cooperative development strategy and has established close strategic alliances with more than 200 well-known enterprises, institutions, and universities at home and abroad.

YGSOFT always takes advanced information technology and energy technology as its core driving force. Relying on its 16 subsidiaries and 35 branches across the country, it provides high-quality products and services to a wide range of customers in the fields of digital enterprises and smart energy. Its customers include many large group enterprises in various industries such as energy and power, water conservancy projects, construction, equipment manufacturing, medical services, mining and metallurgy, transportation, and finance. The company has long been in a leading position in the fields of intelligent finance and enterprise management software.

In the future, the company will always adhere to the core values of "customer first, colleagues above all, and technology for good." It will focus on being a leading expert in group enterprise resource management driven by AI and a co-creator of smart energy. Together with its ecosystem partners, it will continue to promote enterprise upgrading, energy revolution, economic growth, and social progress.

Zhuhai Zhixin Automation Technology Co., Ltd.

(https://www.efacc.com/)

Founded in 2013, Zhuhai Zhixin Automation Technology Co., Ltd. is a technology-leading provider of automation solutions. We perfectly combine experience and technology, committed to helping enterprises reduce workforce and increase efficiency, and to building "smart factories" and realizing intelligent manufacturing. Over the past decade, Zhixin has been customer-centric, focusing on the pain points, challenges, and pressures of customers' automation. We have worked closely with customers to explore and develop competitive products such as "graphical programming Scara robots," "building-block automation," and "non-standard inserters." Zhixin insists on continuous innovation around customer needs, increasing R&D investment, and promoting the upgrading of enterprise manufacturing levels. With dreams in mind, Zhixin aspires to become the "hidden champion in the robot field," following the mission of "cultivating great craftsmen and forging great national equipment." We move forward with the spirit of champions and craftsmen, and at the same time, pursue the happiness of all employees in both material and spiritual aspects.

Zhuhai Yunzhou Intelligence Technology Ltd.

(https://www.yunzhou-tech.com/)

Zhuhai Yunzhou Intelligence Technology Ltd. was founded in 2010 and is a high-tech company focusing on the research, development, production, sales, and provision of industry solutions for unmanned surface vessels (USVs). Over the past decade, Yunzhou Intelligent has consistently pursued independent innovation, bravely venturing into the "uncharted territories" of technological exploration. The company holds over 500 core authorized patents for unmanned boats and has mastered several key technologies, including autonomous navigation, intelligent obstacle avoidance, and coordinated control of unmanned surface vessels, all of which have been appraised as internationally leading levels. The company's products and services cover fields such as smart water area management, marine engineering, public security, and science & technology cultural tourism. Its products are sold in more than 60 countries and regions worldwide, providing users with unmanned boat + specialized industry intelligent water-based system solutions. Yunzhou Intelligent is committed to exploring, protecting, and developing the oceans with intelligent technology, bringing intelligent and unmanned transformations to traditional water-based operations, and propelling the world into the era of intelligent water-based operations.

xFusion Digital Technologies Co., Ltd.

(https://www.xfusion.com/)

xFusion Digital Technologies Co., Ltd. is an explorer in the era of intelligent agents. Adhering to the vision of "building the intelligent agent era together," it has strategically laid out its business in fields such as computing power, urban-enterprise digital intelligence, and smart energy solutions. Super Fusion has deployed 10 R&D centers and 6 supply centers globally, established 6 global technical service centers and 7 regional departments, and serves more than 10,000 customers in over 100 countries and regions worldwide. The company upholds the core values of "customer-centricity, continuous exploration of the essence of business, people-oriented approach, and win-win cooperation." It accelerates the implementation of intelligent transformation in various industries and collaborates with global ecosystem partners to better serve customers with intelligent computing and digital energy.

ELFLECT Technology Co., Ltd.

(http://www.elflect.com/)

ELFLECT Technology Co., Ltd. is a technology service company committed to providing hardware platforms for online education. It aims to lower the barriers to knowledge dissemination and make learning more accessible; to collaborate with enterprises and universities to reshape efficient talent cultivation systems; and to create a digital talent pool connecting everyone willing to share knowledge.

The company is based in the National Integrated Circuit Industrialization Base in Shenzhen, Guangdong Province (referred to as Shenzhen IC Base), and is a director unit of the Shenzhen Semiconductor Industry Association and a national high-tech enterprise. It holds full intellectual property rights to its programmable gate array system.