MIND 2026

The International Conference on Machine Intelligence and Nature-InspireD Computing

CONFERENCE PROGRAM

Organizers: 重庆大学 CHONGQING UNIVERSITY; 中国科学院自动化研究所 INSTITUTE OF AUTOMATION CHINESE ACADEMY OF SCIENCES; THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學; 重庆市科普研究会

Technical Sponsors: IEEE Advancing Technology for Humanity; IEEE Computational Intelligence Society; CAA 中国自动化学会



Welcoming Message from the General Co-Chairs

It is our great pleasure to welcome you to the 2026 International Conference on Machine Intelligence and Nature-Inspired Computing (MIND 2026), held from November 13 to November 15, 2026, in Chongqing, China. MIND aims to provide an international forum for presenting groundbreaking research and exchanging ideas in machine intelligence and nature-inspired computing, bringing together researchers, practitioners, and industry experts to explore emerging trends and foster interdisciplinary collaboration.

This year's technical program features keynote speeches, tutorials, workshops, special sessions, and a series of academic forums, including the Editor-in-Chief Forum, Senior Scholar Forum, and Young Scholar Forum. We are also delighted to feature two outstanding workshops on Neuromorphic computing and Optinformatics for Evolutionary Learning and Optimization, respectively. These activities highlight emerging research directions, encourage cross-disciplinary exchange, and promote collaboration between academia and industry.

A successful conference would not be possible without the valuable contributions of our authors. Following a rigorous peer-review process conducted by expert reviewers and area chairs, a total of 88 papers were selected for inclusion in the proceedings, comprising 73 regular papers and 15 short papers. In addition, 38 abstracts were accepted for presentation. Covering topics such as brain-inspired computing, nature-inspired intelligence, deep learning and large foundation models, embodied AI and robotics, and machine intelligence applications, the accepted contributions reflect the diversity and vitality of our research community. We sincerely thank all authors for sharing their work, as well as the Program Committee members, area chairs, and reviewers for their dedication to ensuring a rigorous and fair review process. The accepted regular and short papers will be submitted to IEEE Xplore for indexing.

We are pleased to recognize outstanding research through the Best Paper Awards, Best Student Paper Awards, and Best Poster Awards. We extend our sincere gratitude to our keynote and tutorial speakers, workshop and special session organizers, and participants in the various forums for enriching the conference program with their expertise and insights.

We also acknowledge the dedicated efforts of the entire MIND 2026 Organizing Committee, including the International Advisory Committee, Program Chairs, Publication Chairs, Award Chairs, Industry Chairs, Tutorial Chairs, Special Session Chairs, Local Arrangements Team, Publicity and Web Team, Finance and Registration Chairs, and Student Volunteers. Their professionalism and commitment were essential to organizing this conference.

Finally, we express our heartfelt gratitude to our organizers, including Chongqing University, the Institute of Automation of the Chinese Academy of Sciences, Hong Kong Polytechnic University, and the Chongqing Science Popularization Research Association, as well as to our technical sponsors, including IEEE, the IEEE Computational Intelligence Society, the China Association of Automation, and the CCF Technical Committee on Intelligent Robotics. We also sincerely thank our sponsors for their generous support and partnership, including the University of Nottingham, the Hong Kong Polytechnic University, Shenzhen University, AiTEN Robotics, FinScope, and Chongqing Jiaotong University.

We hope that MIND 2026 will be an intellectually stimulating and rewarding experience for all participants, providing opportunities to exchange ideas, establish new collaborations, and explore future directions in machine intelligence and nature-inspired computing. Thank you for joining us in Chongqing, and we wish you an enjoyable and inspiring conference!

General Co-Chairs:

Liang Feng, Chongqing University, China

Zeng-Guang Hou, Institute of Automation, Chinese Academy of Sciences, China

Conference Introduction

About MIND 2026

The 2026 International Conference on Machine Intelligence and Nature-InspireD Computing (MIND) will be held in Chongqing, China, from November 13 to November 15, 2026, serving as a premier forum for showcasing original and groundbreaking research contributions in the fields of Machine Intelligence and Nature-Inspired Computing.

The conference aims to bring together researchers, practitioners, and industry experts to share their latest innovations, advancements, and real-world applications. MIND provides a vibrant platform for discussing emerging trends and exploring the transformative potential of machine intelligence combined with computational strategies inspired by nature. Through this convergence, the conference seeks to foster interdisciplinary collaboration and inspire future developments that push the boundaries of these exciting and rapidly evolving research areas.

CONTENTS

Guidelines for On-Site Participants P1

Organizing Committee P3

Program Overview P9

Detailed Program P12

Keynote Speakers P23

Editors-in-Chief Forum P28

Senior Scholar Forum P34

Young Scholar Forum P41

Tutorial Speakers P48

Workshops P54

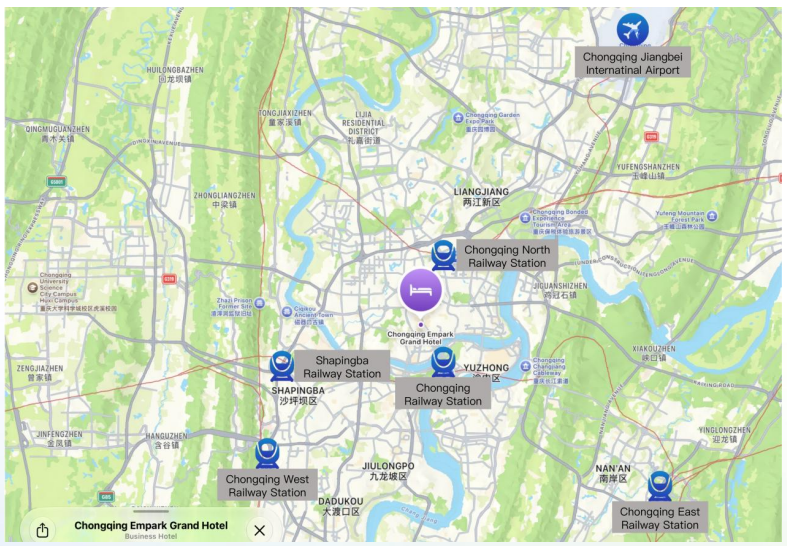
Organization P63

Guidelines for On-site Participants

Conference Venue

Chongqing Empark Grand Hotel (No.1, Second Branch Road, Jianxin North Road)





From Chongqing Jiangbei International Airport to the Hotel, 25 km, about 30-40 mins;

From Chongqing North Railway Station to the Hotel, 7 km, about 15-20 mins;

From Chongqing West Railway Station to the Hotel, 17 km, about 30-40 mins;

From Chongqing East Railway Station to the Hotel, 24 km, about 35-45 mins;

From Chongqing Railway Station to the Hotel, 5 km, about 10-20 mins;

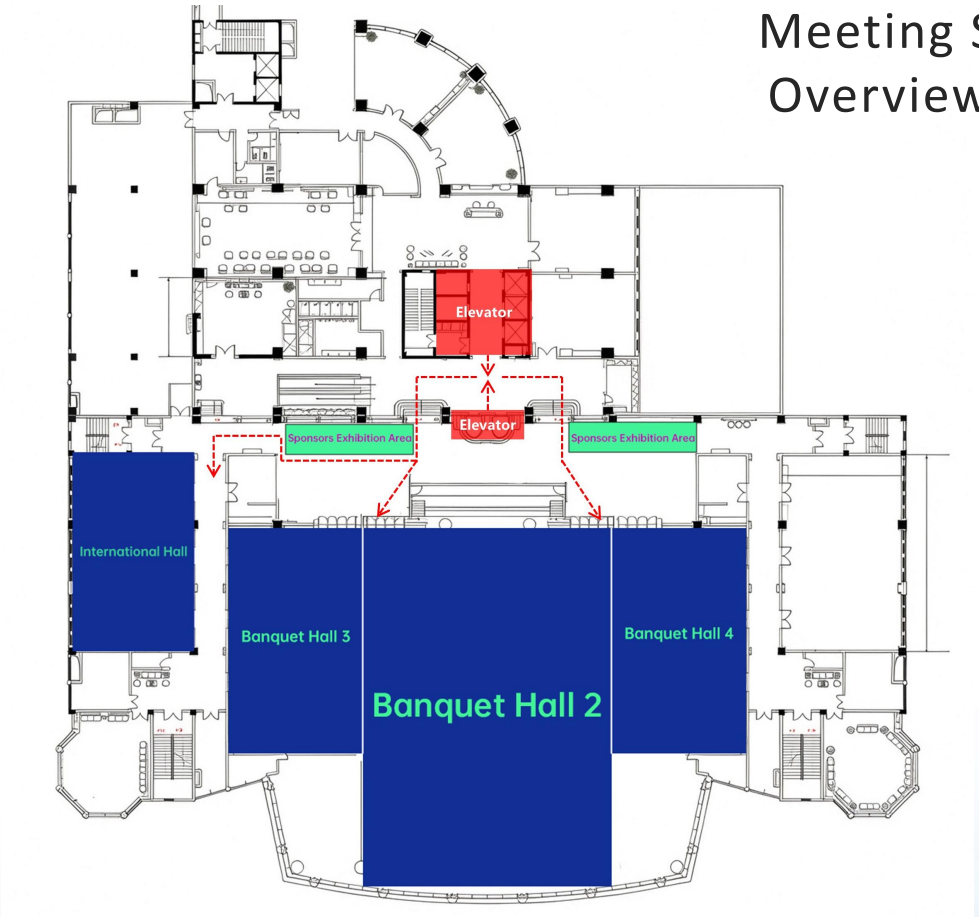
From Shapingba Railway Station to the Hotel, 9.3 km, about 15-20 mins;

Guidelines for On-site Participants

Meeting Room: 3F, Banquet Hall 2, 3, 4, International Hall

Dining Place: -1F, Golden Resources Cafeteria

Meeting Space Overview (3F)



Conference Information

Photos

Agenda

International Advisory Committee



Gary G. Yen (Chair)
Sichuan University, China



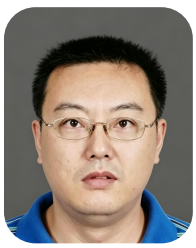
Carlos A. Coello Coello
Instituto Politécnico Nacional (CINVESTAV-IPN), Mexico



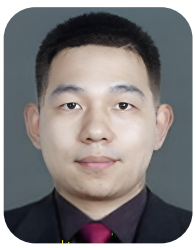
Jon Garibaldi
University of Nottingham Ningbo, China



Yaochu Jin
Westlake University, China



Xiaofeng Liao
Chongqing University, China



Yang Luo
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Wolfgang Maass
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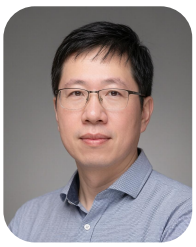
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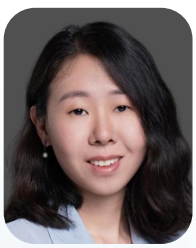
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Xiaofeng Tang
Chongqing University, China



Dongxu Zhang
Xiamen University, China

Program Overview

Date	Time	Activity	Location
Friday Nov. 13	12:00 – 18:00	Registration	Hotel Hall
	14:30 – 16:00	Tutorial Ⅰ	3F, Banquet Hall 3
		Tutorial Ⅱ	3F, Banquet Hall 4
		Best Paper Evaluation Session	3F, International Hall
	16:00 – 16:30	Coffee Break	3F, Foyer of Banquet Hall
	16:30 – 18:00	Tutorial Ⅲ	3F, Banquet Hall 3
		Tutorial Ⅳ	3F, Banquet Hall 4
		Best Paper Evaluation Session	3F, International Hall
	18:30 – 20:30	Welcome Reception	-1F, Golden Resources Cafeteria

Program Overview

Date	Time	Activity	Location
Saturday Nov.14	08:00 – 18:00	Registration	Hotel Hall
	08:30 – 09:00	Opening Ceremony & Group Photo	3F, Banquet Hall 2
	09:00 – 11:15	Keynote Presentations Ⅰ - Ⅲ	
	11:15 – 11:30	Coffee Break	3F, Foyer of Banquet Hall
	11:30 – 12:30	Senior Scholar Forum	3F, Banquet Hall 2
	12:30 – 14:00	Lunch	-1F, Golden Resources Cafeteria
	14:00 – 15:30	Oral Session Ⅰ	3F, International Hall
		Oral Session Ⅱ	3F, Banquet Hall 4
		NC Workshop	3F, Banquet Hall 3
	15:30 – 16:00	Coffee Break & Poster Presentation	3F, Foyer of Banquet Hall
	16:00 – 17:30	Oral Session Ⅲ	3F, International Hall
		Oral Session Ⅳ	3F, Banquet Hall 4
		NC Workshop	3F, Banquet Hall 3
	17:30 – 18:30	Editors-in-Chief Forum	3F, Banquet Hall 3
	19:00 – 21:00	Banquet	3F, Banquet Hall 2

Program Overview

Date	Time	Activity	Location
Sunday Nov.15	08:00 – 12:00	Registration	Hotel Hall
	08:30 – 10:00	Keynote Presentations Ⅳ-Ⅴ	3F, International Hall
	10:00 – 11:00	OELO Workshop	3F, International Hall
		Oral Session Ⅴ	3F, Banquet Hall 3
		Oral Session Ⅵ	3F, Banquet Hall 4
	11:00 – 11:30	Coffee Break & Poster Presentation	3F, Foyer of Banquet Hall
	11:30 – 12:30	Young Scholar Forum	3F, Banquet Hall 3
	12:30	Lunch	-1F, Golden Resources Cafeteria

Detailed Program

Time	Session Chairs	Activity	Location
		Friday, Nov. 13, 2026	
12:00-18:00		Registration	Hotel Hall
14:30 – 16:00	**Anthony Graham Bellotti**, University of Nottingham Ningbo China, China	**Tutorial Speaker Ⅰ:** **Chao Qian, 国家级青年人才, Nanjing University, China** Title: Pareto Optimization for Subset Selection: Theories and Practical Algorithms	3F, Banquet Hall 3
	Yinglan Feng, Shenzhen University, China	**Tutorial Speaker Ⅱ:** **Yajing Zheng, Peking University, China / University College London, UK** Title: SpikeCV: High-Speed Spike Vision for Visual Reconstruction and Perception	3F, Banquet Hall 4
		Tutorial Speaker Ⅱ: **Rui Zhao, Nanyang Technological University, Singapore** Title: Visual Reconstruction and Perception Based on Ultra-High-Speed Spike Camera	
		Tutorial Speaker Ⅱ: **Yakun Chang, Beijing Jiaotong University, China** Title: High-Quality Image Reconstruction from Spike Cameras	
	Xingyu Wu, The Hong Kong Polytechnic University, Hong Kong SAR, China	Best Paper Evaluation Session	3F, International Hall
16:00-16:30		Coffee Break	3F, Foyer of Banquet Hall
16:30-18:00	**Anthony Graham Bellotti**, University of Nottingham Ningbo China, China	**Tutorial Speaker Ⅲ:** **Xiaoming Xue, 国家级青年人才, China University of Petroleum (East China), China** Title: Evolutionary Transfer Optimization: Theory, Methods, and Applications	3F, Banquet Hall 3
	Yinglan Feng, Shenzhen University, China	**Tutorial Speaker Ⅳ:** **Sha Zhao, Zhejiang University, China** Title: Foundation Models and Agents for Non-Invasive Brain–Computer Interfaces	3F, Banquet Hall 4
	Xingyu Wu, The Hong Kong Polytechnic University, Hong Kong SAR, China	Best Paper Evaluation Session	3F, International Hall
18:30-20:30		Welcome Reception	-1F, Golden Resources Cafeteria

Detailed Program

Time	Session Chairs	Activity	Location
		Saturday, Nov. 14, 2026	
08:00-18:00		Registration	Hotel Hall
08:30-09:00		Opening Ceremony & Group Photo	
09:00-11:15	**Liang Feng**, Chongqing University , China	**Keynote Speaker Ⅰ:** **Ong Yew Soon, IEEE Fellow, Nanyang Technological University, Singapore** Title: Evolutionary Multitasking- Past Advances and Future Opportunities	3F, Banquet Hall 2
	Zexuan Zhu, Shenzhen University, China	**Keynote Speaker Ⅱ:** **Bernhard Sendhoff, IEEE Fellow, Honda Research Institute Europe GmbH, Offenbach, Germany** Title: AI in Engineering Design: From Tools to Teams	
	Zeng-Guang Hou, Institute of Automation, Chinese Academy of Sciences , China	**Keynote Speaker Ⅲ:** **Gary G. Yen, IEEE Fellow, Sichuan University, China** Title: Generative Model-based Large-scale Dynamic Multiobjective Optimization	
11:15 – 11:30		Coffee Break	3F, Foyer of Banquet Hall
11:30 – 12:30	**Jianxi Yang**, Chongqing Jiaotong University, China	**Senior Scholar Forum: From Emerging Researcher to Academic Leader: Building a Sustainable and Impactful Research Career** **Jinliang Ding, 国家级高层次人才, Northeastern University, China** **Zeng-Guang Hou, 国家级高层次人才, IEEE Fellow, Institute of Automation, Chinese Academy of Sciences, China** **Xiaofeng Liao, 国家级高层次人才, IEEE Fellow, Chongqing University, China** **Huajin Tang, 国家级高层次人才, IEEE Fellow, Zhejiang University, China** **Xingyi Zhang, 国家级高层次人才, IEEE Fellow, Anhui University, China**	3F, Banquet Hall 2
12:30–14:00		Lunch	-1F, Golden Resources Cafeteria
14:00–15:30	**Qingxia Shang,** Kunming University of Science and Technology, China **Xiaoming Xue**, China University of Petroleum (East China), China	**Oral Presentations Ⅰ: General Track + Nature-inspired Intelligence + Machine Intelligence Applications** 119. A Dual-Stream Constraint-Fused Heuristic Bottleneck Multi-objective Evolutionary Algorithm for Garment Dual-Resource Flexible Job Shop Scheduling Xiuming Zou; Xiaotong Liu; Ye Tian 127. Sparse Mask Topology Learning Assisted Complementary Search for Large-Scale Sparse Multimodal Multi-Objective Optimization Ye Han; Qingxia Shang; Bin Qian; Rong Hu 145. Knee-TAS: LLM-Guided Knee-Based Evolution for Constrained Transformer Architecture Search Lei Liu; Gary G. Yen; Chenyang Li; Zhenan He 174. NeuroReport: Evidence-Grounded Multimodal MRI Reporting with Confidence-Aware LLM Collaboration Rui Liu; Yao Hu; Zhen Chen; Jibin Wu; Zhi-An Huang; Kay Chen Tan 218. GAPPO: An Edge Microservice Deployment Optimization Framework Based on Graph Attention Networks and Proximal Policy Optimization Zhijiao Xiao; JiaWang Guo; Qijie Qiu; Lingjie Li; Zhong Ming 245. Towards Efficient Evaluation of Evolutionary Transfer Optimization: Case Studies on Task-Parameterized Applications Yanchen Li; Xiaoming Xue; Kay Chen Tan	3F, International Hall

Detailed Program

Time	Session Chairs	Activity	Location
		Saturday, Nov. 14, 2026	
14:00–15:30	**Ruibin Bai**, University of Nottingham Ningbo China, China **Shibing Mo**, Xidian University, China	**Oral Presentations Ⅱ： SS-01: AI for Electronic Design Automation: Intelligent Placement and Routing, Physical Design Optimization, and Agentic EDA Systems + SS-12: Hyper-Heuristics and Automated Heuristic Design** 42. AnchorPlace: Anchor-Guided Evolutionary Search for Macro Placement Ruilin Wu; Shibing Mo; Jianchu Xu; Jing Liu 71. Net-Boundary Refinement for Evolutionary Macro Placement Jianchu Xu; Jing Liu; Shibing Mo 86. Efficient Fixed-outline Floorplanning by An Improved Q-learning-assisted Conjugate Subgradient Algorithm Yirui Pan; Xinyan Meng; Yu Chen 168. KITS-GP: Knowledge and Instance Grounded Terminal Synthesis for Genetic Programming in Container Relocation Runhan Liu; Chenwei Jin; Leshan Tan; Ruibin Bai 212. InvEvolve: Evolving White-Box Inventory Policies via Large Language Models with Performance Guarantees Jianghao Lin	3F, Banquet Hall 4
	Jibin Wu, The Hong Kong Polytechnic University, Hong Kong SAR, China	**NC Workshop: The Third Young Scholars Workshop on Neuromorphic Computing** **Welcome Speech from Huajing Tang, IEEE Fellow, Zhejiang University, China** 60. The Functional Role of Pinwheel Topology in the Primary Visual Cortex of High-Order Animals for Complex Natural Image Representation Haoyu Wang; Haixin Zhong; Jiawei Zhang; Wei P. Dai; Yuguo Yu 67. A Bio-Plausible Visual Neural Network for Locust-Inspired Collision Perception Qinbing Fu; Jiani Li; Jiajun Huang; Jigen Peng 80. BS-YOLO: Binary Spiking Neural Network for Energy-Efficient Remote Sensing Object Detection Lewei Yang; Yunshu Wang; Chuandong Li; Zhiman Wang ; Yipeng Zhu 122. A Plug-and-Play Homeostatic Dendritic Spatial Convolution for Robust EEG Decoding Yongsheng Huang; Mingkun Xu; Peibo Duan; Yujie Wu 171. Online Learning in Recurrent Spiking Neural Networks with Heterogeneous Synaptic Dynamics Xiang Wei; Qiang Yu	3F, Banquet Hall 3
15:30-16:00		Coffee Break & Poster Presentation	3F, Foyer of Banquet Hall

Detailed Program

Time	Session Chairs	Activity	Location
		Saturday, Nov. 14, 2026	
16:00-17:30	**Yue-Jiao Gong**, South China University of Technology, China **Zhenzhong Wang**, Xiamen University, China	**Oral Presentations Ⅲ： SS-02: Evolutionary Dynamic Optimization and Machine Learning + SS-04: Meta-Black-Box Optimization and Applications** 54. A Knowledge-Guided Bi-level Evolutionary Algorithm for the Multi-Robot Cooperative Scheduling Problem in Smart Farms Ying Bi; Hongyan Sang; Ling Wang; Quan-Ke Pan 109. A Sensitivity-Guided Triple-Channel Evolutionary Framework for Large-Scale Sparse Multiobjective Optimization Problems Jijia Chen; Zhenzhong Wang; Min Jiang 124. Learning-Driven Dynamic Multiobjective Optimization: Advances, Applications, and Future Directions Jian Guan; Zhenzhong Wang; Min Jiang 152. Dynamics-aware Skeleton Masking for Skeleton-based Temporal Action Segmentation Nan Ju; Bin Lyu; Jinchao Ge; Yanxin Cui; Jiahui Yu 187. PAPoint: Physics-Aware Point Sampler for Physical-Field Reconstruction Guanyao Lu; Xin Zhang; Zhenzhong Wang; Min Jiang 221. Monte Carlo Tree Search-Guided Surrogate-Assisted Evolutionary Algorithm for Expensive Multimodal Optimization Bingbing Niu; Ting Huang; Tianhao Huang; Yahui Jia ; Yuejiao Gong	3F, International Hall
	Xiaoming Xue, China University of Petroleum (East China), China	**Oral Presentations Ⅳ： SS-03: Harnessing Search and Inductive Biases in Optimization and Learning** 102. DS-TARG: Routing-Aware Speculative Verification for Cost-Efficient Selective RAG Zichang Yang; Xingjie Zeng; Ziang Yao; Bin Xiong; Shuai Wang; Guiying Zhao; Shihong Zhang 134. Input-Compatible Routing of Generalist and Specialist Models for Acute Stroke Imaging Zikun Fu; Rui Liu 135. Multifactorial Evolutionary Algorithm with Virtual-Task-Mediated Knowledge Transfer for Many-Task Optimization Xiaoyu Pan; Ruoshan Mi; Wu Lin; Qingling Zhu; Songbai Liu; Lijia Ma; Qiuzhen Lin 142. Engineering-Prior-Guided NSGA-II for Differentiated Capacity-Load Ratio Optimization in County-Level 110 kV Grids with High Distributed PV Penetration Dunbin Xu; Ke Wang; Yan Xu; Ziyue Huang; Fei Geng; Rui Yuan 150. Line Outage Distribution Factor Enhanced GraphSAGE with Dual-Pooling for N-k Contingency Screening in Bulk Power Systems Jian Ma; Xiaofei Xu; Taotao Chen; Xinshan Liu; Shuai Wang; Chaofan Dai 161. Grid Topology-Aware Deep Residual Network with Attention for Distributed Photovoltaic Hosting Capacity Assessment Chen Wang; Hao Cheng; Hualei Wang; Wei Cao; Yu Hong; Rui Yuan	3F, Banquet Hall 4

Detailed Program

Time	Session Chairs	Activity	Location
		Saturday, Nov. 14, 2026	
16:00-17:30	**Jibin Wu**, The Hong Kong Polytechnic University, Hong Kong SAR, China	**NC Workshop: The Third Young Scholars Workshop on Neuromorphic Computing** 185. Adaptive Cognitive Regulation: A Brain-Inspired Computational Framework for Efficient Embodied Intelligence Wenjing Dong; Yujie Guo; Jiebin Zhang; Jian Liu; Yanli Yang; Yao Li; Haoji Xia 200. SmartBrain: A Brain-Inspired Platform for Mobile Tool-Intelligence Research and Applications Guoqing Yang; Feixiang Jing; Haowen Lai; Hong Li 206. Stochastic Reset: Multiplier-Free Interpolated Reset for Spiking Neural Networks Zheyuan Lin; Siqi Cai; Haizhou Li 211. Spike-SeqVPR: Energy-Efficient Sequential Visual Place Recognition via Spiking Neural Networks Junwei Cheng; Wenfeng Xu; Jiaqiang Jiang; Rui Yan 222. A Multi-Accuracy Paradigm for Benchmarking Subject-Independent Error-Related Potential Decoding in Motor Imagery-Based BCIs Xinrui Wang; Mengjie Huang; Duocan Li; Chuanzhi Su; Rui Yang	3F, Banquet Hall 3
17:30-18:30	**Jun Wang,** City University of Hong Kong, Hong Kong SAR, China	**Editors-in-Chief Forum: Shaping the Future of Computational Intelligence: Research Innovation and Scholarly Publishing in the AI Era** **Yiu-Ming Cheung, IEEE Fellow, Hong Kong Baptist University, Hong Kong SAR, China** Editor-in-Chief of IEEE Transactions on Emerging Topics in Computational Intelligence **Huajin Tang, IEEE Fellow, Zhejiang University, China** Editor-in-Chief of IEEE Transactions on Cognitive and Developmental Systems **Jun Wang, IEEE Fellow, City University of Hong Kong, Hong Kong SAR, China** Editor-in-Chief of IEEE Transactions on Artificial Intelligence **Dongrui Wu, IEEE Fellow, Huazhong University of Science and Technology, China** Editor-in-Chief of IEEE Transactions on Fuzzy Systems **Gary G. Yen, IEEE Fellow, Sichuan University, China** Editor-in-Chief of IEEE Transactions on Evolutionary Computation	3F, Banquet Hall 3
19:00-21:00		Banquet	3F, Banquet Hall 2

Detailed Program

Time	Session Chairs	Activity	Location
		Sunday, Nov. 15, 2026	
08:00-12:00		Registration	Hotel Hall
08:30-10:00	**Zexuan Zhu**, Shenzhen University, China	**Keynote Speaker Ⅳ :** **Jose A. Lozano, IEEE Fellow, University of the Basque Country (UPV/EHU) & Basque Center for Applied Mathematics (BCAM), Spain** Title: The Essence of Combinatorial Optimization Problems: From Fourier Structure to Rankings and Algorithms	3F, International Hall
	Zhangxiang Ren, University of Nottingham Ningbo China, China	**Keynote Speaker Ⅴ :** **Sean He, University of Nottingham Ningbo China, China** Title: Towards Generalizable, Lightweight, and Trustworthy Medical Artificial Intelligence	3F, International Hall
10:00-11:00	**Wei Zhou**, Shenzhen University, China	**OELO Workshop: Optinformatics for Evolutionary Learning and Optimization: Methodological Advances and Engineering Applications** 219. An Investigation of Model Merging with Dynamic Expert Sets Yifan Wang; Xuefeng Chen; Jie Li; Liang Feng 228. Neural Constructive Optimization for End-to-End Predict-then-Optimize on Traveling Salesman Problems Heng Yan; Yinglan Feng 230. Canonical Correlation Analysis-Guided Multi-Objective Multi-Task Evolution for Therapeutic Peptide Discovery Qiyuan Yu; Zexuan Zhu	3F, International Hall
	Yao Hu, The Hong Kong Polytechnic University, Hong Kong SAR, China	**Oral Presentations Ⅴ : SS-03: Harnessing Search and Inductive Biases in Optimization and Learning** 163. Engineering-Knowledge-Guided Multistage Differential Evolution for Soft Open Point Operation in Active Distribution Networks With High Photovoltaic Penetration Dunbin Xu; Ke Wang; Ziyue Huang; Yan Xu; Rui Yuan; Fei Geng 194. Adapted Residual-Enhanced Temporal Fusion Transformer with Clear-Sky Features for Power Forecasting of Multi-Site Photovoltaic Peng Zhou 214. Search Bias in Expensive Optimization: A Survey of Sources and Mechanisms Xinyan Wang; Yi Lu; Kai Zhang; Liming Zhang; Qinyang Dai; Xiaoming Xue; Kay Chen Tan	3F, Banquet Hall 3
	Sheng-Hao Wu, South China Agricultural University, China	**Oral Presentations Ⅵ : SS-03: Harnessing Search and Inductive Biases in Optimization andLearning + SS-05: Learning-Assisted Evolutionary Computation** 226. Physics-Informed Surrogate Modeling for Sample-Efficient Production Optimization Zhiwen Wang; Xiaoming Xue; Chenming Cao; Yao Hu; Liming Zhang; Kai Zhang; Kay Chen Tan 231. A Tri-Phase Vision-Language Model Collaborative Framework for Efficient Medical Visual Question Answering Yuanyue Qiao; Yao Hu; Rui Liu; Xiaoming Xue; Kay Chen Tan 137. Large Language Model-Assisted Heterogeneous Exploration for Surrogate-Assisted Expensive Multiobjective Optimization Xueli Zou; Changjie Cao; Yu Zhang; Wang Hu	3F, Banquet Hall 4

Detailed Program

Time	Session Chairs	Activity	Location
		Sunday, Nov. 15, 2026	
11:00-11:30		Coffee Break & Poster Presentation	3F, Foyer of Banquet Hall
11:30-12:30	**Huajin Tang**, Zhejiang University, China	**Young Scholar Forum:** From First Signature Work to Sustainable Impact: Building a High-Impact Early-Career Research Program **Ran Cheng, The Hong Kong Polytechnic University, Hong Kong SAR, China** **Yanggang Feng, Beihang University, China** **Aming Li, 国家级高层次人才, Peking University, China** **Chao Qian, 国家级青年人才, Nanjing University, China** **Yajing Zheng, Peking University, China / University College London, UK**	3F, Banquet Hall 3
12:30-13:30		Lunch	-1F, Golden Resources Cafeteria

Poster Papers

Poster Presentation: 32 papers.
Date and Time: November 14, 2026, 15:30pm–16:00pm.
Location: 3F, Foyer of Banquet Hall.

Paper ID	Authors	Title
17	Quanlin Huang; Xin Deng; Qitao Xie; Biao Wang	Spatiotemporal Feature Extraction Methods for DVS Data Based on SNNs
39	Xiangkai Wang; Bin Jiang; Dongyi He; Yuchi Pan; Gen Li; Xinlai Xing; Qingling Xia; Yun Zhao	TriFQNet: physiology-aligned Fourier branching for confidence-corrected cross-subject motor imagery EEG decoding
41	Wenzhe Xu; Yuqin Wang; Zilong Li; Zhou Wu; Xiumin Li	A Bio-inspired Dual-Pathway Model for Visual Perception and Dynamic Target Tracking
43	Yuan Zheng; Xin Deng; Yu Zhou; Zihong Zhao	HGTSN: Hierarchical Graph-based Temporal Sequence Network for EEG Emotion Recognition
47	Hongyong Xu; Ying Li	Implicit 3D Reconstruction via Multi-Topology Latent Modeling and Geometry-Confidence-aware Integrated Decoding
50	Xujie Han; Hanle Zheng; Siying Liu; Sihan Wang; Haoji Xia; Seng-Hong Lee; Chen Cheng; Hao Guo; Lei Deng	HPDiff: Efficient Latent Diffusion with RGB-Event Hybrid Prior Guidance for Motion Deblurring
51	Sihan Wang; Hanle Zheng; Haoji Xia; Zikai Wang; Xiaojun Qi; Xujie Han; Xilin Wang; Jibin Wu; Lei Deng	Deciphering the Origins of Modality Dominance for Principled Image–Event Fusion
58	Qinbing Fu; Jingyu Huang; Yan Xie; Jigen Peng; Yuchao Tang	An Event-Driven Framework for Fly-Inspired Visual Motion Detection
61	Dongyi He; Xiangkai Wang; Binbing Xu; Bin Jiang; Hongjie Yan; Weixiang Liu; Wai Ting Siok; Nizhuan Wang	RUFNet: Query-Guided Support Mask Refinement and Uncertainty Fusion based on Hybrid Mamba for Few-Shot Brain Tumor Segmentation
74	Haoyi Zhang; Seng-Hong Lee; Lei Deng	Brain-Inspired Multi-Time-Scale Locomotion Control System for Quadruped Robots Based on Heterogeneous Central Pattern Generator
84	Yulin Zhu; Yongshuai Hu; Xin Fan	EEG-MoE: A Manifold-Driven Mixture-of-Experts for Interpretable EEG Classification
98	Junxiu Liu; Tianjiao Zhang; Qiang Fu; Yuling Luo; Sheng Qin; Xue Ouyang; Xiuhao Liang; Wei Wei	NSGA-SNN: Multi-Objective Hyperparameter Optimization for Energy-Efficient Spiking Neural Networks
105	Kunzhi Wang; Yusheng Wu; Jinghui Zhong	MoE-Injector: Class-wise Residual Perturbations for Vision-Language Alignment
112	Mu Hua; Qi Lin; Shigang Yue	An Insect-Inspired Receding Selective Computational Model
115	Yangxuan Zhou; Sha Zhao; Jiquan Wang; Shijian Li; Gang Pan	BrainAgent: A Large Language Model-Driven Multi-Agent Framework for Autonomous Brain Signal Understanding
118	Sha Zhao; Yiming Kang; Jiquan Wang; Gang Pan	CrossBrain: A Unified Multimodal Brain Foundation Model for Heterogeneous Neurophysiological Signals
123	Wutong Xue; Haochang Jin; Dong Xu; Hailiang Yang; Junkai Ji	HiLA-DNA: A Hierarchical Latent Representation Adapter for DNA Regulatory Element Prediction

Poster Papers

Poster Presentation: 32 papers.
Date and Time: November 14, 2026, 15:30pm–16:00pm.
Location: 3F, Foyer of Banquet Hall.

Paper ID	Authors	Title
125	Ziqiang Wang; Zhenxi Song; Wanxiang Luo; Zhiguo Zhang	HDSIF-Net: Hierarchical Dual-Stream Hybrid EEG-fNIRS Interaction and Fusion Network for Brain-Computer Interfaces
126	Singa Xu	Rethinking No-Reference Image Quality Assessment for Spike Camera Image Reconstruction
138	Rui Hou; Yitao Zhu; Chaoyang Li; Pinjie Li; Yuqing Cheng; Bangqing Hua; Yao Zhou	PAIRS: Learning Robust Identity Representations for Diffusion-based Reference Face Restoration
156	Ziming Wang; Lei Liu; Chengting Yu; Aili Wang	OTTD: Online Training through Temporal Divergence for Spiking Neural Networks
158	Lei Liu; Kainan Wang; Aili Wang	Online Learning for Spiking Neural Networks via Spike-Rate Spatio-Temporal Decoupling
166	Qing He; Shuangming Yang; Yanwei Pang	Hardware-aware Event-based Speech Recognition on the Neuromorphic Chip
169	Zikai Wang; Zhixin Cheng; Siying Liu; Sihan Wang; Xujie Han; Haoji Xia; Hao Guo; Lei Deng	DuAlTrack: Reliable Dual Alignment for RGB-Event Tracking
172	Wen Li; Shikui Wei; Yakun Chang	High Frame Rate Stereo Vision with a Hybrid Spike-RGB Camera
192	Xingxing Gu; Zeyu Huang; Tianwei Fang; Li Ma; Quan Liu; Kun Chen	A VAE Latent Prediction Network for EEG-Guided Image Generation with Stable Diffusion
195	Tianwei Fang; Zeyu Huang; Xingxing Gu; Kun Chen; Quan Liu; Li Ma	Net-Wise Attention for Residual-Path Aggregation in Residual Networks
199	Guoqing Yang; Feixiang Jing; Pan Lv	BI-MSeg3D: Brain-Inspired Multimodal Segmentation for Outdoor Sparse-LiDAR Robots
207	Tasleem, Kausar; Abdul Ahad Qureshi	Robust Auditory Attention Detection Under Gaze and Incongruence: A Hybrid CLVTNet Approach with Spatial-Channel Attention
209	Jiaxin Wei; Shuwei Zhu	Multi-Omics Cancer Subtype Classification via Cross-Omics Contrastive Alignment and Adaptive Graph Learning
223	Yuwen Huang; Yi Lin; Yuwen Peng; Long Chen; Fengyan Liang; Ming Yin; Shaomin Zhang	Robustness of Spiking-Band Power versus Threshold-Crossing Features under Controlled Signal Degradation in Intracortical Brain-Computer Interfaces
227	Zhige Chen; Shu Peng; Chengxuan Qin; Rui Liu; Rui Yang; Kay Chen Tan; Jibin Wu	EEG-Arena: Benchmarking and Understanding EEG Foundation Models at Scale

Poster Papers

Poster Presentation: 32 papers.
Date and Time: November 15, 2026, 11:00am–11:30am.
Location: 3F, Foyer of Banquet Hall.

Paper ID	Authors	Title
75	Minghao Zhong; He Yu; Jing Liu	RG-EditFlow: Reliability-Gated Edit Flow for Offline Model-Based Optimization
78	Ling Tang; Hong Zhao; Jing Liu	A Scalable and Decoupled Terminal Placement Framework for 3D IC Hybrid Bonding via Adaptive Discrete Refinement
92	Yiling Chen; Gang Fang; Hao Cui; Yu Li; Peipei Li	Research on route selection design of mobile oil pipeline based on improved A* algorithm
95	Yu Wang; Ke Shang; Zexuan Zhu; Hisao Ishibuchi	Enhancing Pareto Set Learning with Evolutionary Multi-objective Optimization
103	Junxiu Liu; Zhenhua Ma; Senhui Qiu; Sheng Qin; Qiang Fu; Yuling Luo; Wei Wei; Xiuhao Liang; Tuong Lam Pham	Wood Surface Defect Detection Based on the Improved YOLOv7
107	Chaoyi Ding; Mingzhe Li; Qixin Cai; Kaiying Tian; Boning Chen; Zhuqing Wang	HGP-CoEv: A Co-evolutionary Hub Selection Approach for Ontology Matching
108	Kimlong Diep; Zhenzhong Wang	Distance-Aware Winner Guidance for Competitive Learning in Large-Scale Multiobjective Optimization
111	Chaohui Huang; Xianliang Mo; Lei Chen; Hai-Lin Liu	Dynamic Graph Smoothing--Residual Decoupling for Spatio-Temporal Traffic Prediction
113	Zhenyong Mao; Peng Zhang	BR-MR-RSA: Memory-Referenced Variance Control for Compute-Efficient Deep Cox Learning
128	Yingkang Yang; Qingxia Shang; Bin Qian; Rong Hu	An Enhanced MAPPO Approach to Multi-Depot Truck–UAV Collaborative Delivery in Complex Disaster-Affected Areas
129	Biao Liu; Bo Yuan	Efficient Routing-Based Synthesis for Digital Microfluidic Biochips via Reinforcement Learning
132	Junfeng Zhu; Ruibin Bai; Rong Qu; Xinan Chen	Latent Specialisation in LLM-Driven Automated Heuristic Design
139	Ruobing Wei, Wei Zhou, Yichun Guan, Qingxia Shang, Junkai Ji	Combinatorial Medication Recommendation via Temporal-Aware MultiObjective Optimization
151	Dongjiang Tu; Dong Liu; Kang Lin; Yilin Fang; Jun Yang; Ping Han	Wavelet-Enhanced Defect Prototype Memory for Carbon Fiber Defect Detection
154	Lishuai Huang, Yakun Chang	340 FPS Reflection-free Video from Spikes Modulated by a Rapidly Rotating Polarizer
155	Yiqin Huang; Xinyue Chen; Fangqing Gu; Weifeng Guan; Hai-lin Liu	Bilevel Meta-Adaptive Federated SVM for Non-IID Multi-Class Classification

Poster Papers

Poster Presentation: 32 papers.
Date and Time: November 15, 2026, 11:00am–11:30am.
Location: 3F, Foyer of Banquet Hall.

Paper ID	Authors	Title
160	Tao Sheng; Zikang Wang; Fei Geng; Yan Xu; Wei Tong; Rui Yuan	A Pseudo-Cost Neural Hybrid Branching Method for Power Dispatch of Wind-Storage Integrated Energy Systems
176	Weichao Zhou; Dong Liu; Kang Lin; Yilin Fang; Jun Yang; Ping Han	Fiber Structure Prior-Guided Reflection-Decoupled Detection for Carbon Fiber Defect Detection
177	Zhiyao Zhang; Xingyu Wu; Kay Chen Tan	Evolution of Surrogates: Towards Autonomous Surrogate Discovery via Multi-Space LLM-Driven Co-Evolution
178	Bin Xiong; Xingjie Zeng; Cheng Zhong; Shuai Wang; Zichang Yang; Yaxin Pang	ChemSearch-Diff: Uncertainty-Guided Chemical Neighborhood Search in Discrete Graph Diffusion for Property-Targeted Molecular Generation
181	Chenming Cao; Xiaoming Xue; Yinglan Feng; Kay Chen Tan	From No Free Lunch to Optimization Agents: A Blueprint
191	Shengmin Tan; Yingchun Zheng; Hanqing Ni; Xiaonan Yang; Yongkang Hao	Discrete-Neighborhood-Enhanced Newton–Raphson-Based Optimizer for Siting and Power Rating Selection of a Battery Energy Storage System in Radial Distribution Grids
198	Haoyang Shen; Qingyi Cai; Rui Hao; Jian Feng; Zhichen Li; Yi Zhang; Bo Yuan; Lin Zeng; Hui Yang	A Coil-Aware Evolutionary Algorithm for Droplet Routing in Magnetic Digital Microfluidic Chips
201	Boxuan Hu; Ziwei Li; Shuqing Wan; Bin Hu; Shuaidan Lou; Hui Wang	Multi-Archive Guided Artificial Bee Colony with Hierarchical and Mutually Exclusive Updates for Constrained Multi-objective Optimization
203	Wenjie Xiao; Hui Bai; Junhao Chen	SDDMO-Bench: A Benchmark Suite for Streaming Data-Driven Dynamic Multi-Objective Optimization
208	Zenghao Fan; Kai Zhang; Shenghao Wu; Liming Zhang; Xiaoming, Xue; Kay Chen Tan	Meta-Learned Kernel for Sample-Efficient Surrogate-Assisted Optimization
210	Lu Huang; Shuwei Zhu; Wei Fang	Community Event Tracking in Dynamic Attributed Networks via Unbalanced Optimal Transport
213	Jinghui Zhong	Engineering Practices in Explainable AI: Introducing Genetic Programming Algorithms and Applications
215	Yunbo Tang; Yinglan Feng; Xiaoming Xue	Diagnosing Prompt Crossover in Large Language Model-Driven Evolutionary Prompt Optimization
239	Weitao Chen; Wu Lin; Qiuzhen Lin	Relational Surrogate-Assisted Evolution for Expensive Multiobjective Multitasking Optimization
240	Weitao Chen; Wu Lin; Songbai Liu; Qiuzhen Lin	Multiobjective Many-Tasking Evolutionary Optimization Based on Optimizer Portfolio
243	Yanjun Wen; Xiaobo Li; Tianhang Meng; Wenxiang Wang; Xinguo Zhang; Yibo Pan	From Detection to Prediction: A Review of Data-Driven and Physics-Informed Approaches for Wind Turbine Blade Integrity Assessment

Keynote Speakers

Location: 3F, Banquet Hall 2 Time: Nov. 14, 2026, 09:00am-09:45am



Yew-Soon Ong

IEEE Fellow, Fellow of the Singapore National Academy of Engineering
Nanyang Technological University, Singapore

Title

Evolutionary Multitasking-Past Advances and Future Opportunities

Abstract

Inspired by the human ability to reuse knowledge across related tasks, evolutionary multitasking (EMT) has emerged as a paradigm for solving multiple optimization problems through shared search and knowledge transfer. Over the past decade, EMT has evolved from multifactorial evolutionary algorithms and implicit genetic transfer toward increasingly challenging settings, including expensive optimization, knowledge transfer across Pareto solutions, and continuously parameterized, potentially infinite task spaces. Today, rapid advances in AI are opening a new chapter for EMT. As AI moves toward broader generalization, optimization must increasingly discover diverse, novel, and complementary solutions rather than a single optimum. This talk will trace the evolution of EMT and explore emerging opportunities in AI for scientific discovery, physics-informed learning, target-guided search, and novelty and quality-diversity search, highlighting its potential role in enabling more general and adaptive AI systems.

Biography

Prof. Yew-Soon Ong is currently an Endowed Yidan Professor in Artificial Intelligence at the College of Computing & Data Science, Nanyang Technological University (NTU), Singapore, Distinguished AI Fellow (Joint Appointment) of the Singapore's Agency for Science, Technology and Research (A*STAR), Professor (Joint Appointment) of the National Institute of Education, Singapore. He was President's Chair Professor in Computer Science at the College of Computing & Data Science (2019-2026), Chief Artificial Intelligence Scientist of A*STAR (2019-2026), Chair of the School of Computer Science and Engineering, Nanyang Technological University (2016-2019), Director of the Singtel-NTU Cognitive & Artificial Intelligence Joint Lab (SCALE@NTU) (2017-2025), Director of Data Science and AI Research Centre (2017-2020), Director of the Centre for Computational Intelligence/Computational Intelligence Laboratory (2008-2015) and Programme Principal Investigator of the Data Analytics & Complex System Programme in the Rolls-Royce@NTU Corporate Lab (2013-2017).

He received his Bachelor's and Master's degrees from Nanyang Technological University and subsequently his PhD on Artificial Intelligence in Complex Engineering Design from the University of Southampton, United Kingdom. He is a Fellow of IEEE, Fellow of the Singapore national academy of engineering, founding Editor-In-Chief of the IEEE Transactions on Emerging Topics in Computational Intelligence, founding Technical Editor-In-Chief of Memetic Computing Journal (Springer), Senior Editor of IEEE Transactions on Neural Network & Learning Systems, Associate Editor of IEEE Transactions on Evolutionary Computation, IEEE Transactions on Cybernetics, IEEE Transactions on Artificial Intelligence, and chief co-editor of Book Series on Studies in Adaptation, Learning, and Optimization.

He has received five IEEE outstanding paper awards and was listed as a Thomson Reuters highly cited researcher and among the World's Most Influential Scientific Minds. He has published over 300 referred papers at ICML, ICLR, NeurIPS, IJCAI, AAAI, CVPR, KDD, WWW, AAMAS and ACM/IEEE Transactions. In AI, he has been a keynote speaker or senior area chair or area chair of AAAI, IJCAI, ICLR, ICML, NeurIPS, KDD, ICONIP and others.

Keynote Speakers

Location: 3F, Banquet Hall 2 Time: Nov. 14, 2026, 09:45am-10:30am



Bernhard Sendhoff

IEEE Fellow

Honda Research Institute Europe GmbH (Offenbach), Germany

Title

AI in Engineering Design: From Tools to Teams

Abstract

For many years AI particularly, computational intelligence, has been applied to the task of engineering design. I will start my talk by recalling some intelligent tools for modelling, optimization and data analysis that are integrated into the engineering design process. After stating remaining challenges for this "classical" approach, I will focus on using generative AI and large language models as new tools in the engineering domain. Text prompts for shape generation and concept identification are two directions that I will discuss.

In the second part of my presentation, I will introduce cooperative intelligence as a variant of AI that focuses on the interaction between humans and machine intelligence. The science of cooperation is embedded in psychology, social and behavioral science and not least in evolution. It must be augmented by human- AI interaction. We will present first research results on measuring successful cooperation beyond performance.

Engineering design for complex systems is organized in teams. Therefore, cooperative intelligence must not be restricted to dyadic interactions but extended to groups and their complex social dynamics.

Finally, hybrid teams composed of humans and AI agents will not only be human teams augmented by AI but will be new organizational units where agentic AI will form own cooperative sub- units that can explore design spaces semi- autonomously and proactively while concurrently participating in team discussions and conclusions. Engineering innovation will be more disruptive, and faster with the human perspective on integration and interoperability.

Biography

Prof. Bernhard Sendhoff is currently Operating Officer at Honda R&D Co., Ltd., Chief Executive Officer of the Global Network Honda Research Institutes and Managing Director of the Honda Research Institute Europe GmbH. He is Honorary Professor at the Technical University of Darmstadt, Germany. He is a Fellow of the IEEE, a Senior Member of the ACM, and a Member of the SAE. He has authored or co-authored more than 200 peer reviewed journal and conference papers and over 40 patents and has a Google Scholar hindex of 54.

Keynote Speakers

Location: 3F, Banquet Hall 2 Time: Nov. 14, 2026, 10:30am-11:15am



Gary G. Yen
IEEE Fellow, IET Fellow, IAPR Fellow
Sichuan University, China

Title

Generative Model-based Large-scale Dynamic Multiobjective Optimization

Abstract

Large-scale, dynamic multi-objective optimization problems (LSDMOPs) extend traditional DMOPs into high-dimensional decision spaces, reflecting the growing complexity of real-world dynamic systems under expected or unanticipated environmental changes. A typical example is the economic control of gas transportation in large-scale pipeline network, which involve hundreds or even thousands of decision variables, representing pipeline node pressures, compressor power settings, and valve operations. The system is simultaneously affected by various time-varying factors, such as consumer demand, market fluctuation, environmental temperature and humidity. In such contexts, algorithms are required to quickly find optimal solutions after each environment change, maintaining supply-demand balance while minimizing energy consumption. In practice, there are many more such examples, including dynamic resource allocation of 5G networks in dense urban environments, UAV swarm dispatch in a disaster relief scenario, and large-scale dynamic vehicle routing planning, just to name a few.

However, the effectiveness of existing dynamic multi-objective evolutionary algorithms is severely limited for LSDMOPs, due to inadequate training data, predictions in unknown environments, and large-scale dynamic search spaces. To address these challenges, we propose a diffusion learning-based evolutionary framework, inspired by the intrinsic analogy between iterative evolution of optimization search and stepwise denoising in diffusion learning. Specifically, a new training paradigm is designed to learn the changing patterns of optimal regions in dynamic fitness landscapes. It achieves this by using populations' evolutionary trajectories from initial solutions towards Pareto-optimal solutions across historical environments as rich supervised training data. In addition, we introduce a trajectory alignment loss which encourages the stepwise denoising process to conform to the true population evolutionary behaviors in terms of spatial exploration, convergence trends, and boundary adaptation. The trained model can gradually control denoising direction and intensity using predefined conditions, allowing it to generate optimization paths from random noise toward Pareto-optimal solutions for a new environment.

Along with an adversarial autoencoder-based large-scale dynamic multi-objective evolutionary framework and a large language model-based large-scale dynamic multi-objective evolutionary framework, we will assess how deep generative modeling techniques and large-scale multi-objective evolutionary algorithms can be seamlessly integrated to solve large-scale DMOPs effectively and efficiently. Experimental results on a typical dynamic multi-objective test suite with problem settings from 10 to 1,000 dimensions demonstrate that the optimization performance of the proposed framework outperforms existing state-of-the-art designs. Especially in large-scale scenarios, the proposed framework is considered superior in terms of solution quality and computational efficiency.

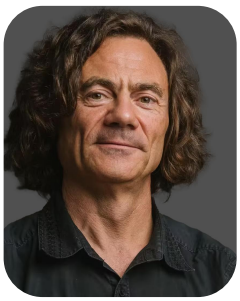
Biography

Prof. Gary G. Yen received his Ph.D. degree in electrical and computer engineering from the University of Notre Dame in 1992. He was a Regents Professor in the School of Electrical and Computer Engineering, Oklahoma State University. He recently joined Sichuan University, College of Computer Science as a Chair Professor. His research interest includes intelligent control, computational intelligence, evolutionary multiobjective optimization, conditional health monitoring, signal processing and their industrial/defense applications.

He was an associate editor of the IEEE Transactions on Neural Networks, IEEE Transactions on Evolutionary Computation, IEEE Transactions on Emerging Topics on Computational Intelligence, and IEEE Control Systems Magazine during 1994-1999, and of the IEEE Transactions on Control Systems Technology, IEEE Transactions on Systems, Man and Cybernetics (Parts A and B) and IFAC Journal on Automatica and Mechatronics during 2000-2010. He is currently serving as an associate editor for the IEEE Transactions on Cybernetics and IEEE Transactions on Artificial Intelligence. He served as Vice President for the Technical Activities, IEEE Computational Intelligence Society in 2004-2005 and was the founding editor-in-chief of the IEEE Computational Intelligence Magazine, 2006-2009. He was elected to serve as the President of the IEEE Computational Intelligence Society in 2010-2011 and is elected as a Distinguished Lecturer for the term 2012-2014, 2016-2018, 2021-2023, and 2025-2027. He received Regents Distinguished Research Award from OSU in 2009, 2011 Andrew P Sage Best Transactions Paper award from IEEE Systems, Man and Cybernetics Society, 2013 Meritorious Service award from IEEE Computational Intelligence Society and 2014 Lockheed Martin Aeronautics Excellence Teaching award. He is a Fellow of IEEE, IET and IAPR.

Keynote Speakers

Location: 3F, International Hall Time: Nov. 15, 2026, 08:30am-09:15am



Jose A. Lozano
IEEE Fellow
University of the Basque Country (UPV/EHU) & Basque Center for Applied Mathematics (BCAM), Spain

Title

The Essence of Combinatorial Optimization Problems: From Fourier Structure to Rankings and Algorithms

Abstract

What is the essential structure of a combinatorial optimization problem? Objective functions provide a natural description, but may hide common structures between apparently different problems and the features that determine algorithmic behaviour. In this talk, I will present Fourier analysis as a common language for understanding combinatorial optimization problems. I will discuss Fourier representations of classical permutation-based problems such as TSP, LOP, and QAP, showing how they reveal intrinsic dimensionality, equivalence between instances, and relationships between problem classes. I will then move from objective functions to the rankings they induce, which are the information used by many optimization algorithms. Recent results extending Chow's theorem to rankings provide a spectral characterization of this information, including for functions defined over permutations. Finally, I will discuss how these structural insights can influence algorithmic behaviour, using the Fourier decomposition of the Linear Ordering Problem as an example.

Biography

Prof. Jose A. Lozano received his M.Sc. degrees in Mathematics (1991) and Computer Science (1992), and his Ph.D. in Computer Science (1998) (Best Engineering Thesis Award) from the University of the Basque Country (UPV/EHU). He is Full Professor in the Department of Computer Science and Artificial Intelligence at UPV/EHU and leads the Intelligent Systems Group. Since 2019 he has served as the Scientific Director of the Basque Center for Applied Mathematics (BCAM). He was named IEEE Fellow in 2021. He has published more than 180 ISI-indexed journal articles, several of them highly cited, and has contributed influential books, edited volumes and special issues in machine learning, evolutionary computation and probabilistic modelling.

His research interests include combinatorial optimization, machine learning, probabilistic graphical models, time-series analysis and applications in fields such as medicine, biology and ecology. He has supervised over 30 PhD theses, many recognized with national and international awards, and has received distinctions such as the Basque Country Research Award (2024) and several best paper awards.

He has held leading roles in the organization of major conferences, including serving as General Chair of IEEE CEC 2017 and ECML-PKDD 2021, and Program Chair of GECCO 2020. He has served on editorial boards of journals such as IEEE Transactions on Evolutionary Computation, IEEE Transactions on Neural Networks and Learning Systems, Evolutionary Computation and ACM Transactions on Evolutionary Learning and Optimization.

Keynote Speakers

Location: 3F, International Hall Time: Nov. 15, 2026, 09:15am-10:00am



Sean He

The University of Nottingham Ningbo China, China

Title

Towards Generalizable, Lightweight, and Trustworthy Medical Artificial Intelligence

Abstract

Medical imaging is the cornerstone of disease screening, diagnosis, and prognostic assessment, and artificial intelligence, represented by vision foundation models, is profoundly reshaping clinical workflows. However, translating medical AI into real-world clinical practice still faces three major challenges. First, high-quality annotated data are scarce, and the imaging process itself can impose an additional radiation burden. Second, large models incur high computational costs and generalize poorly across modalities and clinical centers. Third, the trustworthiness and interpretability of diagnostic results remain to be improved. This talk is organized around three stages: data, analysis, and diagnosis. At the data level, we build the first public ultrasound segmentation dataset for cesarean scar defects, and propose a CT-free PET attenuation and scatter correction method based on few-shot cross-domain adaptation, which adapts to new clinical settings with only a handful of samples. At the analysis level, we combine parameter-efficient fine-tuning, knowledge distillation, frequency-guided multi-task routing, and frozen foundation model adaptation to achieve lightweight and generalizable medical image analysis. At the diagnosis level, we leverage multi-agent collaborative verification and hyperbolic multimodal learning to improve the accuracy and trustworthiness of pathological diagnosis and survival prediction.

Biography

Prof. Sean He, an Australian citizen with a PhD in Computer Science, is Chair Professor of Computer Science and Technology, Discipline Leader, and Director of the Computer Vision and Intelligent Perception Laboratory at the University of Nottingham Ningbo China. He received his PhD in Computer Science from the University of Technology Sydney, Australia, in 1999. He has been selected for a national high-level talent program and as a Zhejiang Provincial Key Talent, and has been named in Stanford University's list of the World's Top 2% Scientists for consecutive years.

He has long worked on computer vision, machine learning, medical image analysis, and intelligent perception. He has published more than 500 papers in leading international journals such as IEEE TPAMI and ACM Computing Surveys and at major conferences including CVPR, ICCV, and AAAI, with over 16,000 citations on Google Scholar. Before returning to China, he led or participated in 36 research and industrialization projects with total funding equivalent to more than RMB 20 million, including over RMB 10 million from industry collaborations.

Since joining the University of Nottingham Ningbo China full-time in 2022, he has led the development of Computer Science and Technology as a Ningbo Excellent Distinctive Discipline (Category A), established the Computer Vision and Intelligent Perception (CVIP) research team, and advanced the building of an international research platform and talent development system. Focusing on healthcare, urban safety, and the digital economy, he has led research projects such as intelligent detection in breast cancer pathology images, conducted pathology image analysis and computer-aided diagnosis research with medical institutions, and worked with local companies on the development and commercialization of technologies including intelligent video processing and intelligent inspection of rail transit bridges. In recent years, the team has also published important findings in Nature Portfolio journals such as npj Digital Medicine and Scientific Data.

In 2026, a student team led by him won first place worldwide in the Surgical Action Triplet Recognition challenge at the 29th International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2026), the first time a Chinese university has won this challenge. The result demonstrates the team's research strength in medical artificial intelligence and surgical video understanding.

In addition, he has organized international conferences in Ningbo, including VSIP 2024 and CVIDL 2025, which attracted nearly 500 attendances from experts and scholars in China and abroad. He has supervised 37 PhD graduates and 4 postdoctoral researchers, and continues to promote international academic collaboration, high-level talent development, and the industrial application of artificial intelligence technologies.

Editors-in-Chief Forum

(listed by last name alphabetically)

Shaping the Future of Computational Intelligence: Research Innovation and Scholarly Publishing in the AI Era

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm

The Editors-in-Chief Panel Session creates a forum for leaders of the IEEE CIS Transactions to share practical insights, experiences, and best practices in scholarly publishing with conference attendees. As AI and computational intelligence reshape the publication landscape through open science, reproducibility standards, and the rise of generative tools, this discussion will highlight emerging trends, key challenges, and new opportunities.

Attendees will engage directly with the Editors-in-Chief on timely topics, including evolving publication norms and their impact on research dissemination; ethical expectations for authors, reviewers, and editors; strategies for effective submission, review, and revision; policies on preprints and AI-assisted writing; strengthening peer review and addressing plagiarism and scientific misconduct; and the importance of closer collaboration between researchers and journals to advance rigor, transparency, and impact.

Panelists:

Yiu-Ming Cheung	Editor-in-Chief: IEEE Transactions on Emerging Topics in Computational Intelligence Hong Kong Baptist University, Hong Kong SAR, China
Huajin Tang	Editor-in-Chief: IEEE Transactions on Cognitive and Developmental Systems Zhejiang University, China
Jun Wang	Editor-in-Chief: IEEE Transactions on Artificial Intelligence City University of Hong Kong, Hong Kong SAR, China
Dongrui Wu	Editor-in-Chief: IEEE Transactions on Fuzzy Systems Huazhong University of Science and Technology, China
Gary G. Yen	Editor-in-Chief: IEEE Transactions on Evolutionary Computation Sichuan University, China

Moderator:

Jun Wang	Editor-in-Chief: IEEE Transactions on Artificial Intelligence City University of Hong Kong, Hong Kong SAR, China

Editors-in-Chief Forum

Moderator (Panelists)

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm



Jun Wang

IEEE Fellow	City University of Hong Kong, Hong Kong SAR, China

Editor-in-Chief: IEEE Transactions on Artificial Intelligence

Biography

Prof. Jun Wang is Chair Professor of Computational Intelligence with appointments in the Department of Computer Science and the Department of Data Science at City University of Hong Kong. Before taking up his current role, he held academic positions at Dalian University of Technology, Case Western Reserve University, the University of North Dakota, and The Chinese University of Hong Kong. Since 2025, he has served as Editor-in-Chief of IEEE Transactions on Artificial Intelligence, extending a long record of editorial and professional leadership in computational intelligence. His research interests include neural networks, computational intelligence, optimization, data processing, and intelligent control, particularly the development of neural and optimization methods for complex engineering and decision problems.

Editors-in-Chief Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm



Yiu-Ming Cheung

IEEE Fellow	Hong Kong Baptist University, Hong Kong SAR, China

Editor-in-Chief: IEEE Transactions on Emerging Topics in Computational Intelligence

Biography

Prof. Yiu-Ming Cheung is Chair Professor of Artificial Intelligence in the Department of Computer Science and Dean of the Institute for Research and Continuing Education at Hong Kong Baptist University. He is an elected member of the European Academy of Sciences and Arts and the European Academy of Engineering, as well as a Fellow of IEEE, AAAS, IAPR, IET, BCS, and the International Academy of Artificial Intelligence Sciences. His honors include the 2023–2024 RGC Senior Research Fellow Award, the HKBU President's Award for Outstanding Performance in Scholarly Work, and the 2023 APNNS Outstanding Achievement Award. He was elected an IEEE Computational Intelligence Society Distinguished Lecturer in 2020 and was named a Changjiang Scholar Chair Professor by the Ministry of Education of China. He currently serves as Editor-in-Chief of IEEE Transactions on Emerging Topics in Computational Intelligence and serves or has served as an Associate Editor of leading journals including IEEE Transactions on Cognitive and Developmental Systems, ACM Transactions on Intelligent Systems and Technology, Pattern Recognition, and Neurocomputing. His research spans machine learning, visual computing, data science, pattern recognition, multiobjective optimization, and information security.

Editors-in-Chief Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm



Huajin Tang

IEEE Fellow	Zhejiang University, China

Editor-in-Chief: IEEE Transactions on Cognitive and Developmental Systems

Biography

Prof. Huajin Tang is currently a professor with Zhejiang University, College of Computer Science and Technology, and The State Key Lab for Brain-Machine Intelligence, China. He is an IEEE Fellow. His research interests include neuromorphic computing, neuromorphic hardware and cognitive systems, robotic cognition, etc. He received a number of prestigious recognitions and awards, such as 2011 Role Model Award of Institute for Infocomm Research Singapore, 2016 IEEE Transactions on Neural Networks and Learning Systems Outstanding Paper Award, 2019 IEEE Computational Intelligence Magazine Outstanding Paper Award, 2023 Neural Networks Best Paper Award, and 2024 APNNS Outstanding Achievement Award, etc. Prof. Tang is the Editors-in-Chief of IEEE Transactions on Cognitive and Developmental Systems since 2022. Prof. Tang has served as an Associate Editor of IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cognitive and Developmental Systems and Frontiers in Neuromorphic Engineering, Neural Networks, and Editorial Board Member for Frontiers in Robotics and AI. He was the General Co-Chair of IEEE CIS-RAM 2024, Program Chair of IEEE CIS-RAM (2015, 2017), and Chair of IEEE Symposium on Neuromorphic Cognitive Computing (2016-2020), and International Symposium on Neural Networks (2019). He is a Board of Governor member of International Neural Network Society since 2019.

Editors-in-Chief Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm



Dongrui Wu

IEEE Fellow	Huazhong University of Science and Technology, China

Editor-in-Chief: IEEE Transactions on Fuzzy Systems

Biography

Prof. Dongrui Wu is Deputy Director of the Key Laboratory of the Ministry of Education for Image Processing and Intelligent Control, School of Artificial Intelligence and Automation, Huazhong University of Science and Technology, Wuhan, China. His research interests include affective computing, brain-computer interface, computational intelligence, and machine learning. He has 150 publications (6,400+ Google Scholar citations; h=39), including a book "Perceptual Computing" (Wiley-IEEE Press, 2010), and five US/PCT patents.

He received the IEEE International Conference on Fuzzy Systems Best Student Paper Award in 2005, the IEEE Computational Intelligence Society (CIS) Outstanding PhD Dissertation Award in 2012, the IEEE Transactions on Fuzzy Systems Outstanding Paper Award in 2014, the North American Fuzzy Information Processing Society (NAFIPS) Early Career Award in 2014, the IEEE Systems, Man and Cybernetics (SMC) Society Early Career Award in 2017, and the IEEE SMC Society Best Associate Editor Award in 2018. He was a finalist of the IEEE Transactions on Affective Computing Most Influential Paper Award in 2015, the IEEE Brain Initiative Best Paper Award in 2016, the 24th International Conference on Neural Information Processing Best Student Paper Award in 2017, the Hanxiang Early Career Award in 2018, and the USERN Prize in Formal Sciences in 2019. He was a selected participant of the Heidelberg Laureate Forum in 2013, the US National Academies Keck Futures Initiative (NAKFI) in 2015, and the US National Academy of Engineering German-American Frontiers of Engineering (GAFOE) in 2015. His team won the First Prize of the China Brain-Computer Interface Competition in 2019.

He is an Associate Editor of the IEEE Transactions on Fuzzy Systems (2011-2018; 2020-), the IEEE Transactions on Human-Machine Systems (since 2014), the IEEE Computational Intelligence Magazine (since 2017), and the IEEE Transactions on Neural Systems and Rehabilitation Engineering (since 2019). He was the lead Guest Editor of the IEEE Computational Intelligence Magazine Special Issue on Computational Intelligence and Affective Computing, and the IEEE Transactions on Fuzzy Systems Special Issue on Brain Computer Interface. He is a Senior Member of the IEEE, a Board member and Distinguished Speaker of the NAFIPS, and a member of IEEE Systems, Man and Cybernetics Society Brain-Machine Interface Systems Technical Committee, IEEE CIS Fuzzy Systems Technical Committee, Emergent Technologies Technical Committee, and Intelligent Systems Applications Technical Committee. He has been Chair/Vice Chair of the IEEE CIS Affective Computing Task Force since 2012.

Editors-in-Chief Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov. 14, 2026, 17:30pm-18:30pm



Gary G. Yen

IEEE Fellow, IET Fellow, IAPR Fellow	Sichuan University, China

Editor-in-Chief: IEEE Transactions on Evolutionary Computation

Biography

Prof. Gary G. Yen received his Ph.D. degree in electrical and computer engineering from the University of Notre Dame in 1992. He was a Regents Professor in the School of Electrical and Computer Engineering, Oklahoma State University. He recently joined Sichuan University, College of Computer Science as a Chair Professor. His research interest includes intelligent control, computational intelligence, evolutionary multiobjective optimization, conditional health monitoring, signal processing and their industrial/defense applications.

He was an associate editor of the IEEE Transactions on Neural Networks, IEEE Transactions on Evolutionary Computation, IEEE Transactions on Emerging Topics on Computational Intelligence, and IEEE Control Systems Magazine during 1994-1999, and of the IEEE Transactions on Control Systems Technology, IEEE Transactions on Systems, Man and Cybernetics (Parts A and B) and IFAC Journal on Automatica and Mechatronics during 2000-2010. He is currently serving as an associate editor for the IEEE Transactions on Cybernetics and IEEE Transactions on Artificial Intelligence. He served as Vice President for the Technical Activities, IEEE Computational Intelligence Society in 2004-2005 and was the founding editor-in-chief of the IEEE Computational Intelligence Magazine, 2006-2009. He was elected to serve as the President of the IEEE Computational Intelligence Society in 2010-2011 and is elected as a Distinguished Lecturer for the term 2012-2014, 2016-2018, 2021-2023, and 2025-2027. He received Regents Distinguished Research Award from OSU in 2009, 2011 Andrew P Sage Best Transactions Paper award from IEEE Systems, Man and Cybernetics Society, 2013 Meritorious Service award from IEEE Computational Intelligence Society and 2014 Lockheed Martin Aeronautics Excellence Teaching award. He is a Fellow of IEEE, IET and IAPR.

Senior Scholar Forum

(listed by last name alphabetically)

From Emerging Researcher to Academic Leader: Building a Sustainable and Impactful Research Career

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm

The Senior Scholars Forum brings together distinguished researchers and experienced academic leaders to share their insights and experiences in academic career development, with a particular focus on the growth of early-career faculty members and young researchers. Building a successful academic career requires not only scientific creativity and high-quality research, but also a clear research vision, sustained contributions, effective collaboration, and the ability to navigate evolving academic expectations. Drawing on their own career journeys, senior scholars will offer valuable perspectives on the opportunities, challenges, and important decisions that shape long-term academic development.

This interactive forum will explore key aspects of academic career development, including identifying independent research directions, establishing a distinctive academic profile, balancing short-term achievements with long-term research goals, building research teams and international collaborations, and managing responsibilities in research, teaching, and academic service. Discussions will also consider how emerging AI technologies are reshaping research practices and creating new opportunities for young faculty members. Participants will have the opportunity to engage directly with senior scholars, learn from their experiences, and gain practical insights into developing a sustainable and impactful academic career.

Panelists:

Jinliang Ding	国家级高层次人才, Northeastern University, China
Zeng-Guang Hou	国家级高层次人才, IEEE Fellow, Institute of Automation, Chinese Academy of Sciences, China
Xiaofeng Liao	国家级高层次人才, IEEE Fellow, Chongqing University, China
Huajin Tang	国家级高层次人才, IEEE Fellow, Zhejiang University, China
Xingyi Zhang	国家级高层次人才, IEEE Fellow, Anhui University, China

Moderator:

Jianxi Yang	Chongqing Jiaotong University, China

Senior Scholar Forum

Moderator

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Jianxi Yang

Chongqing Jiaotong University, China

Biography

Prof. Jianxi Yang is currently a Doctoral Supervisor at Chongqing Jiaotong University, where he serves as Dean of the School of Information Science and Engineering. He holds a Ph.D. in Engineering and is a Young and Middle-aged Leading Talent in Science and Technology Innovation in the Transportation Industry, a Chongqing Leading Talent in Science and Technology Innovation, and an Academic and Technical Leader in Computer Science and Technology of Chongqing. His research focuses on big data and knowledge engineering in the transportation field, with particular emphasis on the interdisciplinary integration of “AI + bridge engineering” and on vertical large models and knowledge-graph collaborative applications for intelligent bridge maintenance.

As a representative effort, he led the development of BridgeGPT, a domain-specific large model for bridge maintenance, which passed filing and registration and was launched for service in 2025, becoming the first filed large model among universities in Chongqing, and was integrated into the Chongqing Science and Technology Innovation Brain in 2026. Since 2025, he has been invited to international conferences on machine intelligence and has delivered keynote reports on the collaboration of large models and knowledge graphs in bridge engineering; based on the preliminary achievements of BridgeGPT, Chongqing Jiaotong University joined the Transportation Large Model Innovation and Industry Alliance led by the Ministry of Transport.

He has won two Second Prizes of the National Science and Technology Progress Award and more than 10 provincial and ministerial science and technology awards, and has presided over more than 10 science and technology projects, including National Natural Science Foundation projects and provincial and ministerial major projects.

Senior Scholar Forum

Panelists

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Jinliang Ding

国家级高层次人才	Northeastern University, China

Biography

Prof. Jinliang Ding is a Level-II Professor and doctoral supervisor at Northeastern University. He currently serves as Deputy Director of the State Key Laboratory of Synthetical Automation for Process Industries, Dean of the College of Future Technology, Executive Vice Dean of both the College of Information Science and Engineering and the College of Robot Science and Engineering, and a member of Northeastern University's Eighth Academic Committee. He is a recipient of the National Science Fund for Distinguished Young Scholars and has been selected for several national-level talent programs. His research focuses on intelligent modelling, optimization, decision-making and control of complex industrial processes, production-wide operational optimization, industrial big-data analytics, machine learning, and computational intelligence.

He has led more than 30 major research projects and published over 200 papers, including more than 100 articles in leading IEEE and IFAC journals. His honors include the Best Paper Award of Control Engineering Practice for 2011–2013, the 14th China Youth Science and Technology Award, the Second Prize of the State Technological Invention Award, and four provincial or ministerial first prizes.

He is an IEEE Senior Member, an Executive Council Member of the Chinese Association of Automation, and Deputy Director of its Process Control Technical Committee. He also serves on the IFAC technical committees for Mining, Mineral and Metal Processing and Large Scale Complex Systems, and holds editorial positions with IEEE Transactions on Evolutionary Computation, IEEE Transactions on Emerging Topics in Computational Intelligence, IEEE Transactions on Circuits and Systems II, and Control Engineering of China.

Senior Scholar Forum

Panelists

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Zeng-Guang Hou

国家级高层次人才, IEEE Fellow	Institute of Automation, Chinese Academy of Sciences, China

Biography

Prof. Zeng-Guang Hou is at the Institute of Automation, Chinese Academy of Sciences, and Chair Professor in the School of Artificial Intelligence at the University of Chinese Academy of Sciences. He also holds guest-professor appointments at Macau University of Science and Technology and the University of Science and Technology Beijing. His earlier posts include Associate Professor at the Institute of Automation, Visiting Professor at the University of Saskatchewan, Research Assistant at The Hong Kong Polytechnic University, and postdoctoral researcher at the Institute of Systems Science, Chinese Academy of Sciences.

He serves as a Vice President of the Chinese Association of Automation and on the INNS Board of Governors. His research spans intelligent control, computational intelligence, rehabilitation and assistive robotics, and medical robots for intervention and surgery.

Senior Scholar Forum

Panelists

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Xiaofeng Liao

国家级高层次人才, IEEE Fellow	Chongqing University, China

Biography

Prof. Xiaofeng Liao is a Chang Jiang Scholar Distinguished Professor at Chongqing University. He is a Fellow of IEEE, the Asia-Pacific Artificial Intelligence Association, and the Artificial Intelligence Industry Alliance. He is also a recipient of the State Council Special Government Allowance and an Academic and Technical Leader of Chongqing.

He previously served as Dean of the School of Computer Science and Deputy Director of the Faculty of Information at Chongqing University, as well as Dean of the School of Electronic and Information Engineering at Southwest University. He currently directs the Key Laboratory of Dependable Service Computing in Cyber Physical Society of the Ministry of Education.

He formerly served as an Associate Editor of IEEE Transactions on Cybernetics and currently serves as Editor-in-Chief of the Journal of Machine Learning and Information Security and on the editorial boards of IEEE Transactions on Neural Networks and Learning Systems, Big Data Mining and Analytics, and several leading Chinese journals.

Senior Scholar Forum

Panelists

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Huajin Tang

国家级高层次人才, IEEE Fellow	Zhejiang University, China

Biography

Prof. Huajin Tang is currently a professor with Zhejiang University, College of Computer Science and Technology, and The State Key Lab for Brain-Machine Intelligence, China. He is an IEEE Fellow. His research interests include neuromorphic computing, neuromorphic hardware and cognitive systems, robotic cognition, etc. He received a number of prestigious recognitions and awards, such as 2011 Role Model Award of Institute for Infocomm Research Singapore, 2016 IEEE Transactions on Neural Networks and Learning Systems Outstanding Paper Award, 2019 IEEE Computational Intelligence Magazine Outstanding Paper Award, 2023 Neural Networks Best Paper Award, and 2024 APNNS Outstanding Achievement Award, etc. Prof. Tang is the Editors-in-Chief of IEEE Transactions on Cognitive and Developmental Systems since 2022. Prof. Tang has served as an Associate Editor of IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cognitive and Developmental Systems and Frontiers in Neuromorphic Engineering, Neural Networks, and Editorial Board Member for Frontiers in Robotics and AI. He was the General Co-Chair of IEEE CIS-RAM 2024, Program Chair of IEEE CIS-RAM (2015, 2017), and Chair of IEEE Symposium on Neuromorphic Cognitive Computing (2016-2020), and International Symposium on Neural Networks (2019). He is a Board of Governor member of International Neural Network Society since 2019.

Senior Scholar Forum

Panelists

Location: 3F, Banquet Hall 2 Time: Nov.14, 2026, 11:30am – 12:30pm



Xingyi Zhang

国家级高层次人才, IEEE Fellow	Anhui University, China

Biography

Prof. Xingyi Zhang is a doctoral supervisor at Anhui University, where he serves as Dean of the School of Computer Science and Technology. He is an IEEE Fellow, a recipient of the State Council Special Government Allowance, and a Distinguished Professor under a national major talent program in artificial intelligence, supported by the National Science Fund for Excellent Young Scholars. He also directs the Key Laboratory of Intelligent Computing and Signal Processing of the Ministry of Education and serves as Vice President of the Anhui Association of Artificial Intelligence.

His research focuses on multiobjective evolutionary optimization, cognitive computing for complex networks, and artificial intelligence. He has published over 200 papers, including more than 100 in leading venues such as IEEE TEVC, IEEE TNNLS, NeurIPS, and AAAI, and received the IEEE TEVC Outstanding Paper Award (2018, 2021, 2024) and the First Prize of the Anhui Provincial Natural Science Award.

He serves as an Associate Editor of IEEE Transactions on Evolutionary Computation and has been repeatedly named an Elsevier Highly Cited Chinese Researcher, a Clarivate Highly Cited Researcher, and a Stanford/Elsevier World's Top 2% Scientist.

Young Scholar Forum

(listed by last name alphabetically)

From First Signature Work to Sustainable Impact: Building a High-Impact Early-Career Research Program

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm

The Young Scholar Forum provides a platform for emerging leaders in computational intelligence, machine learning, brain-inspired computing, and nature-inspired optimization to share forward-looking perspectives on the future of AI. As the field moves rapidly toward integrating large-scale models, neuromorphic architectures, interpretable systems, and data-efficient learning, early- and mid-career researchers are at the forefront of driving these transformations.

This interactive session will explore how new paradigms, e.g., foundation models, bio-inspired intelligence, evolutionary computation, embodied intelligence, are reshaping both fundamental research and practical applications. Discussions will address the latest challenges and opportunities in reproducibility, ethical AI, and open science, as well as strategies for building impactful collaborations in an increasingly interdisciplinary landscape. Attendees will gain first-hand insights into the directions that will shape the next decade of machine intelligence and nature-inspired computing.

Panelists:

Ran Cheng	The Hong Kong Polytechnic University, Hong Kong SAR, China
Yanggang Feng	Beihang University, China
Aming Li	国家级高层次人才, Peking University, China
Chao Qian	国家级青年人才, Nanjing University, China
Yajing Zheng	Peking University, China / University College London, UK

Moderator:

Huajin Tang	国家级高层次人才, IEEE Fellow, Zhejiang University, China

Young Scholar Forum

Moderator

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Huajin Tang

国家级高层次人才, IEEE Fellow	Zhejiang University, China

Biography

Prof. Huajin Tang is currently a professor with Zhejiang University, College of Computer Science and Technology, and The State Key Lab for Brain-Machine Intelligence, China. He is an IEEE Fellow. His research interests include neuromorphic computing, neuromorphic hardware and cognitive systems, robotic cognition, etc. He received a number of prestigious recognitions and awards, such as 2011 Role Model Award of Institute for Infocomm Research Singapore, 2016 IEEE Transactions on Neural Networks and Learning Systems Outstanding Paper Award, 2019 IEEE Computational Intelligence Magazine Outstanding Paper Award, 2023 Neural Networks Best Paper Award, and 2024 APNNS Outstanding Achievement Award, etc. Prof. Tang is the Editors-in-Chief of IEEE Transactions on Cognitive and Developmental Systems since 2022. Prof. Tang has served as an Associate Editor of IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cognitive and Developmental Systems and Frontiers in Neuromorphic Engineering, Neural Networks, and Editorial Board Member for Frontiers in Robotics and AI. He was the General Co-Chair of IEEE CIS-RAM 2024, Program Chair of IEEE CIS-RAM (2015, 2017), and Chair of IEEE Symposium on Neuromorphic Cognitive Computing (2016-2020), and International Symposium on Neural Networks (2019). He is a Board of Governor member of International Neural Network Society since 2019.

Young Scholar Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Ran Cheng

The Hong Kong Polytechnic University, Hong Kong SAR, China

Biography

Prof. Ran Cheng is Associate Head for Outreach and Partnership, Associate Professor, and Presidential Young Scholar in the Department of Data Science and Artificial Intelligence at The Hong Kong Polytechnic University. Before joining PolyU, he served as an Associate Professor at the Southern University of Science and Technology. His current responsibilities combine research, teaching, academic outreach, and partnership development.His research focuses on computational intelligence for modelling and optimizing complex systems, with particular interests in evolutionary computation, representation learning, and efficient, scalable optimization. He develops learning-assisted and data-driven methods for problems in which objective evaluation is expensive, decision spaces are large, or system behavior is difficult to model directly.

Young Scholar Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Yanggang Feng

Beihang University, China

Biography

Prof. Yanggang Feng is a doctoral supervisor in the School of Mechanical Engineering and Automation and the Robotics Institute at Beihang University, where he has worked since May 2021. Before joining Beihang, he served as a Project Researcher at the University of Tokyo from 2019 to 2021. He currently contributes to the international robotics community as an Associate Editor of IEEE Transactions on Neural Systems and Rehabilitation Engineering and IEEE Robotics and Automation Letters.His research interests include wearable and rehabilitation robots, exoskeletons, embodied artificial intelligence, and the design and control of damping systems, with an emphasis on human-robot interaction and assistive technologies that can operate safely and effectively in real-world settings.

Young Scholar Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Aming Li

国家级高层次人才	Peking University, China

Biography

Prof. Aming Li is currently an Associate Professor at the School of Advanced Manufacturing and Robotics, Peking University. Before joining Peking University, he worked as a postdoctoral researcher at ETH Zürich and the University of Oxford.His research interests cover collective intelligence, control theory, and evolutionary game theory. His work has appeared in journals including Science, Nature- series journals, and PNAS. He is a recipient of the Long-Term Cross-Disciplinary Fellowship Award from the International Human Frontier Science Program Organization.

Young Scholar Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Chao Qian

国家级青年人才	Nanjing University, China

Biography

Prof. Chao Qian is a doctoral supervisor and Assistant to the Dean in the School of Artificial Intelligence at Nanjing University, where he is also a member of the LAMDA Group and Director of the Sinopec–Nanjing University Data Joint Laboratory. Before returning to Nanjing University as an Associate Professor in 2019, he served as an Associate Researcher in the School of Computer Science and Technology at the University of Science and Technology of China. He was promoted to Professor in 2024 and has also held visiting research appointments at the University of the Basque Country and the University of Birmingham. His professional service includes serving as Founding Chair of the IEEE Computational Intelligence Society Task Force on Evolutionary Learning and as a member of its Evolutionary Computation Technical Committee. His research focuses on artificial intelligence, evolutionary computation, and machine learning, including evolutionary algorithm theory, black-box optimization, learning to optimize, evolutionary learning, and applications in science and electronic design automation.

Young Scholar Forum

Panelists

Location: 3F, Banquet Hall 3 Time: Nov.15, 2026, 11:30am – 12:30pm



Yajing Zheng

Peking University, China

Biography

Dr. Yajing Zheng is a Boya Postdoctoral Fellow at Peking University and an Honorary Research Fellow at University College London (UCL), where she works under the guidance of Prof. Karl Friston. She serves as the Deputy Secretary-General of the CSIG Technical Committee on Brain-Inspired Vision. Her research focuses on brain-inspired computing, neuromorphic vision, spiking neural networks, and active inference. She led the development of SpikeCV, an open-source project for spike vision, which received the 2023 OpenI Excellent Project Incubation Award and Excellent Developer Award.

She serves as an Area Chair for CVPR 2026 and WACV 2027, and as a reviewer for Nature Human Behaviour, NeurIPS, CVPR, ICCV, and ICML. She was recognized as an Outstanding Reviewer at ICCV 2023. She has led several national and municipal research projects and received honors including the CCF Outstanding Doctoral Dissertation Award, Peking University Outstanding Doctoral Dissertation Award, and Peking University Outstanding Postdoctoral Fellow. She has published over 20 papers as first or corresponding author in venues including TPAMI, TIP, Cell Patterns, NeurIPS Spotlight, CVPR Highlight, and AAAI.

Tutorial Speakers

Location: 3F, Banquet Hall 3 Time: Nov.13, 2026, 14:30pm – 16:00pm



Chao Qian
国家级青年人才
Nanjing University, China

Title

Pareto Optimization for Subset Selection: Theories and Practical Algorithms

Abstract

Subset selection aims to select a subset from a total set of items for optimizing some given objective function while satisfying some constraints. It is NP-hard, and has applications in diverse areas, including machine learning, data mining, natural language processing, computer vision, information retrieval, etc. This tutorial will introduce a promising framework, Pareto optimization, for the subset selection problem. The main idea of Pareto optimization is to transform the subset selection problem into a bi-objective optimization problem, then employ a multi-objective evolutionary algorithm to solve it, and finally return the best feasible solution w.r.t. the original subset selection problem from the generated non-dominated solution set. We will show that it achieves the best-so-far theoretical and practical performances in several applications of subset selection. We will also introduce advanced variants of Pareto optimization for large-scale, noisy and dynamic subset selection. Finally, we will briefly review the recent progress on this topic.

Biography

Prof. Chao Qian is a doctoral supervisor and Assistant to the Dean in the School of Artificial Intelligence at Nanjing University, where he is also a member of the LAMDA Group and Director of the Sinopec–Nanjing University Data Joint Laboratory. Before returning to Nanjing University as an Associate Professor in 2019, he served as an Associate Researcher in the School of Computer Science and Technology at the University of Science and Technology of China. He was promoted to Professor in 2024 and has also held visiting research appointments at the University of the Basque Country and the University of Birmingham. His professional service includes serving as Founding Chair of the IEEE Computational Intelligence Society Task Force on Evolutionary Learning and as a member of its Evolutionary Computation Technical Committee. His research focuses on artificial intelligence, evolutionary computation, and machine learning, including evolutionary algorithm theory, black-box optimization, learning to optimize, evolutionary learning, and applications in science and electronic design automation.

Tutorial Speakers

Location: 3F, Banquet Hall 4 Time: Nov.13, 2026, 14:30pm – 16:00pm



Yajing Zheng
Peking University, China

Title

SpikeCV: High-Speed Spike Vision for Visual Reconstruction and Perception

Abstract

Spike cameras, inspired by the biological retina's integrate-and-fire mechanism, provide a novel approach to continuous visual sensing by capturing visual information as asynchronous binary spike streams at ultra-high temporal resolution. Unlike conventional frame-based cameras, spike cameras offer unique advantages in capturing high-speed motion and dynamic scenes, opening new opportunities for visual reconstruction and perception.

This tutorial will introduce the fundamental principles, recent advances, and emerging applications of spike-based vision, with a particular focus on SpikeCV, an open-source platform for spike camera data processing and visual computing. We will first provide an overview of spike camera imaging mechanisms, spike data representations, and the SpikeCV framework, including its datasets, algorithms, and research ecosystem. We will then explore representative approaches to high-quality image and video reconstruction from spike streams, covering key challenges in recovering visual details, handling complex motion, and improving reconstruction quality. Furthermore, we will discuss how the rich temporal information captured by spike cameras can support high-speed visual perception and scene understanding. Finally, we will highlight current challenges and promising research directions toward efficient and continuous visual intelligence.

This tutorial aims to provide researchers and students with a comprehensive introduction to spike-based vision, bridging neuromorphic sensing, computational imaging, and intelligent visual perception.

Biography

Dr. Yajing Zheng is a Boya Postdoctoral Fellow at Peking University and an Honorary Research Fellow at University College London (UCL), where she works under the guidance of Prof. Karl Friston. She serves as the Deputy Secretary-General of the CSIG Technical Committee on Brain-Inspired Vision. Her research focuses on brain-inspired computing, neuromorphic vision, spiking neural networks, and active inference. She led the development of SpikeCV, an open-source project for spike vision, which received the 2023 OpenI Excellent Project Incubation Award and Excellent Developer Award.

She serves as an Area Chair for CVPR 2026 and WACV 2027, and as a reviewer for Nature Human Behaviour, NeurIPS, CVPR, ICCV, and ICML. She was recognized as an Outstanding Reviewer at ICCV 2023. She has led several national and municipal research projects and received honors including the CCF Outstanding Doctoral Dissertation Award, Peking University Outstanding Doctoral Dissertation Award, and Peking University Outstanding Postdoctoral Fellow. She has published over 20 papers as first or corresponding author in venues including TPAMI, TIP, Cell Patterns, NeurIPS Spotlight, CVPR Highlight, and AAAI.

Tutorial Speakers

Location: 3F, Banquet Hall 4 Time: Nov.13, 2026, 14:30pm – 16:00pm



Rui Zhao
Nanyang Technological University, Singapore

Title

Visual Reconstruction and Perception Based on Ultra-High-Speed Spike Camera

Abstract

Clear imaging and reliable perception of high-speed dynamic scenes are key requirements for intelligent vision systems. Conventional frame-based cameras rely on globally synchronized exposure, so in high-speed scenes they must trade motion blur against noise. Inspired by the retinal fovea, the spike camera records the photon stream continuously at up to 40 kHz. Each pixel asynchronously integrates light and fires spikes, which offers a new continuous imaging paradigm for ultra-high-speed vision. However, binary spikes represent light intensity only coarsely, and they fluctuate randomly, partly because photons arrive according to Poisson statistics. This talk focuses on two fundamental and mutually coupled tasks: motion analysis and image reconstruction. First, a hierarchical spatial-temporal spike fusion representation progressively condenses information from spike streams to extract accurate light intensity for optical flow estimation. Second, a joint estimation method moves beyond estimating motion between two time instants and recovers a sequence of optical flows from continuous spike streams, using multiple motion segments as mutual constraints to capture fine-grained motion. Third, an image reconstruction method based on multi-granularity temporal alignment mitigates spike fluctuations and produces clear images of high-speed scenes. Finally, the talk will discuss future directions for spike-based vision.

Biography

Dr. Rui Zhao is a Research Fellow at Nanyang Technological University, Singapore. He received his B.E. degree in Communication Engineering from Tianjin University in 2020 and his Ph.D. degree in Computer Science from Peking University in 2025. His research interests include computational photography and computer vision, with a focus on neuromorphic cameras, motion estimation, and brain-inspired perception. He has published more than 20 papers in journals and conferences such as TPAMI, CVPR, ICCV, ICML, and NeurIPS. He has organized several tutorials, challenges, special session and workshops at conferences including IJCAI, PRCV, ICME, ICIP, and VCIP and has served as an Area Chair for international conferences such as ICME and ICASSP.

Tutorial Speakers

Location: 3F, Banquet Hall 4 Time: Nov.13, 2026, 14:30pm – 16:00pm



Yakun Chang
Institude of Information Science, Beijing Jiaotong University

Title

High-Quality Image Reconstruction from Spike Cameras

Abstract

Traditional digital cameras are limited by discrete-frame acquisition modes, resulting in large data redundancy and limited dynamic range when capturing high-speed moving scenes. The spike camera is based on the accumulation of light signals and asynchronous firing, outputs a spike stream in 1-bit mode, and can achieve sampling rates of tens of kHz. However, spike signals themselves are not suitable for human viewing, making it necessary to reconstruct them into videos. Therefore, it is worth considering what properties the spike camera itself has and how to reconstruct higher-dynamic-range videos from spike signals. In addition to analyzing the spike camera itself, it is also worth exploring whether there are ways to modulate the light reaching the spike camera and what interesting effects can be achieved after modulation. Finally, the spike camera does not mean that traditional cameras are inadequate. We can also build a hybrid camera combining a spike camera and a traditional camera to explore what interesting effects can be achieved.

Biography

Prof. Yakun Chang is currently a tenured Associate Professor at the School of Computer Science and Technology, Beijing Jiaotong University. He received his B.S., M.S., and Ph.D. degrees from the School of Electronic Engineering, Xidian University, with his Ph.D. awarded in 2020. He previously served as a Boya Postdoctoral Fellow at the School of Computer Science, Peking University (Supervisor: Boxin Shi), and was a visiting scholar at the Beijing Academy of Artificial Intelligence (BAAI). His main research interests include low-level computer vision and computational photography, covering spike-based vision imaging, high-frame-rate video reconstruction, high dynamic range imaging, and image restoration.

Tutorial Speakers

Location: 3F, Banquet Hall 3 Time: Nov.13, 2026, 16:30pm – 18:00pm



Xiaoming Xue
国家级青年人才
China University of Petroleum (East China), China

Title

Evolutionary Transfer Optimization: Theory, Methods, and Applications

Abstract

Evolutionary transfer optimization mines and reuses experiential knowledge from related optimization tasks, thereby breaking the "experience silo" dilemma caused by the "solving-from-scratch" paradigm of conventional evolutionary algorithms and significantly improving both the solution efficiency and solution quality of new tasks. However, real-world engineering optimization tasks, as exemplified by oil and gas field development, are generally characterized by strong nonlinearity, high uncertainty, and pronounced heterogeneity: reservoir numerical simulations are computationally expensive, geological parameters are subject to considerable uncertainty, and optimization problems across different blocks and development stages differ markedly in the dimensionality of decision variables and in their objective spaces. These characteristics give rise to prominent challenges, including difficulty in knowledge extraction, low transfer accuracy, and poor adaptability. This tutorial systematically reviews research progress in evolutionary transfer optimization from three perspectives: theory, methods, and applications. At the theoretical level, it introduces an analogical-reasoning-driven framework for transfer optimization and elucidates the underlying mechanisms of task similarity measurement and knowledge transferability. At the methodological level, it focuses on a series of methods including multi-source knowledge extraction, adaptive transfer, and cross-task mapping learning, addressing the core questions of "what to transfer, when to transfer, and how to transfer" between tasks. At the application level, it draws on typical oil and gas development scenarios such as well placement and injection–production parameter optimization to demonstrate the practical effectiveness of transfer optimization in reducing the number of numerical simulation calls and accelerating development-plan decision-making. The tutorial concludes with an outlook on the integration of evolutionary transfer optimization with deep learning and large models, with the aim of shifting the decision-making paradigm for complex problems from traditional trial-and-error toward intelligent experience inheritance.

Biography

Prof. Xiaoming Xue is at the School of Petroleum Engineering, China University of Petroleum (East China), where he also serves as Deputy Director of the Institute of Deep Oil and Gas Development within the State Key Laboratory of Deep Oil and Gas. His research lies at the intersection of artificial intelligence and oil&gas development, with the aim of providing theoretical foundations and enabling technologies for the digital and intelligent transformation of oilfields. He has authored more than 20 papers in leading journals and conferences. His work has been recognized with the IEEE CIS Outstanding PhD Dissertation Award (2027) and the Best Paper Award at the 2025 IEEE CEC. In 2024, ScholarGPS ranked him among the top 0.5% of scholars worldwide in mathematical optimization over the preceding five years. He is a member of IEEE, IEEE CIS, CCF, and SPE. He regularly reviews for major conferences in artificial intelligence, including AAAI, IEEE CEC, IJCNN, and MIND, and for leading journals such as Nature Communications, IEEE TPAMI, IEEE TEVC, and IEEE TNNLS.

Tutorial Speakers

Location: 3F, Banquet Hall 4 Time: Nov.13, 2026, 16:30pm – 18:00pm



Sha Zhao
Zhejiang University, China

Title

Foundation Models and Agents for Non-Invasive Brain–Computer Interfaces

Abstract

As brain-computer interface (BCI) applications expand toward diverse tasks and real-world scenarios, conventional decoding models face significant challenges in generalizing across tasks, individuals, and devices. Brain foundation models offer a promising solution by learning generalizable neural representations through large-scale pretraining, thereby enabling more universal brain-state decoding. This talk focuses on foundation models and agents for non-invasive BCI. We first introduce our recent efforts in large-scale EEG data construction, model architecture design, pretraining, and continual adaptation to heterogeneous tasks. We then present EEGAgent and BrainAgent, which integrate the understanding, reasoning, planning, and tool-use capabilities of large language models to enable end-to-end intelligent EEG analysis from natural-language instructions. Finally, we discuss future directions for brain foundation models and BCI agents.

Biography

Prof. Sha Zhao is a Doctoral Supervisor at the College of Computer Science and Technology / The State Key Lab of Brain-Machine Intelligence, Zhejiang University. She also serves as the Deputy Secretary-General of the CCF Technical Committee on Pervasive Computing.

Her research focuses on Brain-Computer Interfaces and Artificial Intelligence, with an emphasis on non-invasive neural signal decoding and closed-loop regulation. She has published over 50 high-quality papers and has received five Best Paper/Award honors, including the ACM UbiComp Best Paper Award (CCF-A; first-authored and the first from China). In 2022, she was honored with the ACM Hangzhou Rising Star Award. She has led several prestigious research projects, including grants from the National Natural Science Foundation of China (General and Youth Programs), the Zhejiang Provincial Natural Science Foundation (Key Program), and sub-projects of STI 2030 Major Projects.

She actively contributes to the academic community as a Program Committee Member for top-tier conferences such as ICLR and NeurIPS, and as a reviewer for leading international journals including TCDS, TNSRE, and JBHI.

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Jun Zhou	University of Electronic Science and Technology of China

The Third Young Scholars Workshop on Neuromorphic Computing

Workshop Agenda:

(Friday, November 13, 2026)

Time	Session Chairs	Activity	Location
12:00-18:00	Registration		Hotel Hall
14:30 – 16:00	**Yinglan Feng**, Shenzhen University, China	**Tutorial Speaker Ⅱ:** **Yajing Zheng, Peking University, China / University College London, UK** Title: SpikeCV: High-Speed Spike Vision for Visual Reconstruction and Perception	3F, Banquet Hall 4
		Tutorial Speaker Ⅱ: **Rui Zhao, Nanyang Technological University, Singapore** Title: Visual Reconstruction and Perception Based on Ultra-High-Speed Spike Camera	
		Tutorial Speaker Ⅱ: **Yakun Chang, Beijing Jiaotong University, China** Title: High-Quality Image Reconstruction from Spike Cameras	
16:00-16:30		Coffee Break	3F, Foyer of Banquet Hall
16:30-18:00	**Yinglan Feng**, Shenzhen University, China	**Tutorial Speaker Ⅳ:** **Sha Zhao, Zhejiang University, China** Title: Foundation Models and Agents for Non-Invasive Brain–Computer Interfaces	3F, Banquet Hall 4
18:30-20:30		Welcome Reception	-1F, Golden Resources Cafeteria

The Third Young Scholars Workshop on Neuromorphic Computing

Workshop Agenda:

(Saturday, November 14, 2026)

Time	Session Chairs	Activity	Location
08:00–18:00		Registration	Hotel Hall
12:30–14:00		Lunch	-1F, Golden Resources Cafeteria
14:00–15:30	**Jibin Wu**, The Hong Kong Polytechnic University, Hong Kong SAR, China	**The Third Young Scholars Workshop on Neuromorphic Computing** **Welcome Speech: Huajin Tang, IEEE Fellow, Zhejiang University, China** 60. The Functional Role of Pinwheel Topology in the Primary Visual Cortex of High-Order Animals for Complex Natural Image Representation Haoyu Wang; Haixin Zhong; Jiawei Zhang; Wei P. Dai; Yuguo Yu 67. A Bio-Plausible Visual Neural Network for Locust-Inspired Collision Perception Qinbing Fu; Jiani Li; Jiajun Huang; Jigen Peng 80. BS-YOLO: Binary Spiking Neural Network for Energy-Efficient Remote Sensing Object Detection Lewei Yang; Yunshu Wang; Chuandong Li; Zhiman Wang; Yipeng Zhu 122. A Plug-and-Play Homeostatic Dendritic Spatial Convolution for Robust EEG Decoding Yongsheng Huang; Mingkun Xu; Peibo Duan; Yujie Wu 171. Online Learning in Recurrent Spiking Neural Networks with Heterogeneous Synaptic Dynamics Xiang Wei; Qiang Yu	3F, Banquet Hall 3
15:30–16:00		Coffee Break & Poster Presentation	3F, Foyer of Banquet Hall
16:00–17:30	**Jibin Wu**, The Hong Kong Polytechnic University, Hong Kong SAR, China	**The Third Young Scholars Workshop on Neuromorphic Computing** 185. Adaptive Cognitive Regulation: A Brain-Inspired Computational Framework for Efficient Embodied Intelligence Wenjing Dong; Yujie Guo; Jiebin Zhang; Jian Liu; Yanli Yang; Yao Li; Haoji Xia 200. SmartBrain: A Brain-Inspired Platform for Mobile Tool-Intelligence Research and Applications Guoqing Yang; Feixiang Jing; Haowen Lai; Hong Li 206. Stochastic Reset: Multiplier-Free Interpolated Reset for Spiking Neural Networks Zheyuan Lin; Siqi Cai; Haizhou Li 211. Spike-SeqVPR: Energy-Efficient Sequential Visual Place Recognition via Spiking Neural Networks Junwei Cheng; Wenfeng Xu; Jiaqiang Jiang; Rui Yan 222. A Multi-Accuracy Paradigm for Benchmarking Subject-Independent Error-Related Potential Decoding in Motor Imagery-Based BCIs Xinrui Wang; Mengjie Huang; Duocan Li; Chuanzhi Su; Rui Yang	3F, Banquet Hall 3
19:00–21:00		Banquet	3F, Banquet Hall 2

Optinformatics for Evolutionary Learning and Optimization: Methodological Advances and Engineering Applications

This workshop aims to bring together researchers, practitioners, and industry experts to explore recent advances in optinformatics for evolutionary learning and optimization, an emerging paradigm that integrates data-driven knowledge extraction with evolutionary search processes. While evolutionary algorithms have demonstrated strong global optimization capabilities across diverse domains, they traditionally operate in a problem-independent manner, often neglecting valuable knowledge accumulated from previously solved tasks. Optinformatics addresses this limitation by incorporating techniques from data mining, machine learning, and information processing into the optimization pipeline, enabling more efficient, knowledge-aware, and adaptive search.

The workshop will cover methodological innovations in evolutionary learning, including inter-problem knowledge transfer, data-driven feature engineering, and evolutionary reinforcement learning, as well as their applications in real-world scenarios such as vehicle routing, automated machine learning, and complex system optimization. By bridging optimization theory, data-centric learning, and engineering practice, this workshop aims to provide a platform for exchanging novel ideas, fostering interdisciplinary collaboration, and advancing the development of next-generation intelligent optimization frameworks.

Workshop Committees:

(listed by last name alphabetically)

General Co-chairs

Ong Yew Soon	Nanyang Technological University (Singapore)
Zexuan Zhu	Shenzhen University

Optinformatics for Evolutionary Learning and Optimization: Methodological Advances and Engineering Applications

Workshop Committees:

(listed by last name alphabetically)

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Huanhuan Chen	University of Science and Technology of China
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Jinghui Zhong	South China University of Technology
Wei Zhou	Shenzhen University

Optinformatics for Evolutionary Learning and Optimization: Methodological Advances and Engineering Applications

Workshop Agenda:

(Sunday, November 15, 2026)

Time	Session Chairs	Activity	Location
08:00-12:00	/	Registration	Hotel Hall
08:30-10:00	**Zexuan Zhu**, Shenzhen University, China	**Keynote Speaker Ⅳ:** **Prof. Jose A. Lozano, IEEE Fellow, University of the Basque Country (UPV/EHU) & Basque Center for Applied Mathematics (BCAM), Spain** Title: The Essence of Combinatorial Optimization Problems: From Fourier Structure to Rankings and Algorithms	3F, International Hall
	Zhangxiang Ren, University of Nottingham Ningbo China, China	**Keynote Speaker Ⅴ:** **Sean He, University of Nottingham Ningbo China, China** Title: Towards Generalizable, Lightweight, and Trustworthy Medical Artificial Intelligence	3F, International Hall
10:00-11:00	**Wei Zhou**, Shenzhen University, China	**OELO Workshop: Optinformatics for Evolutionary Learning and Optimization: Methodological Advances and Engineering Applications** 219. An Investigation of Model Merging with Dynamic Expert Sets Yifan Wang; Xuefeng Chen; Jie Li; Liang Feng 228. Neural Constructive Optimization for End-to-End Predict-then-Optimize on Traveling Salesman Problems Heng Yan; Yinglan Feng 230. Canonical Correlation Analysis-Guided Multi-Objective Multi-Task Evolution for Therapeutic Peptide Discovery Qiyuan Yu; Zexuan Zhu	3F, International Hall

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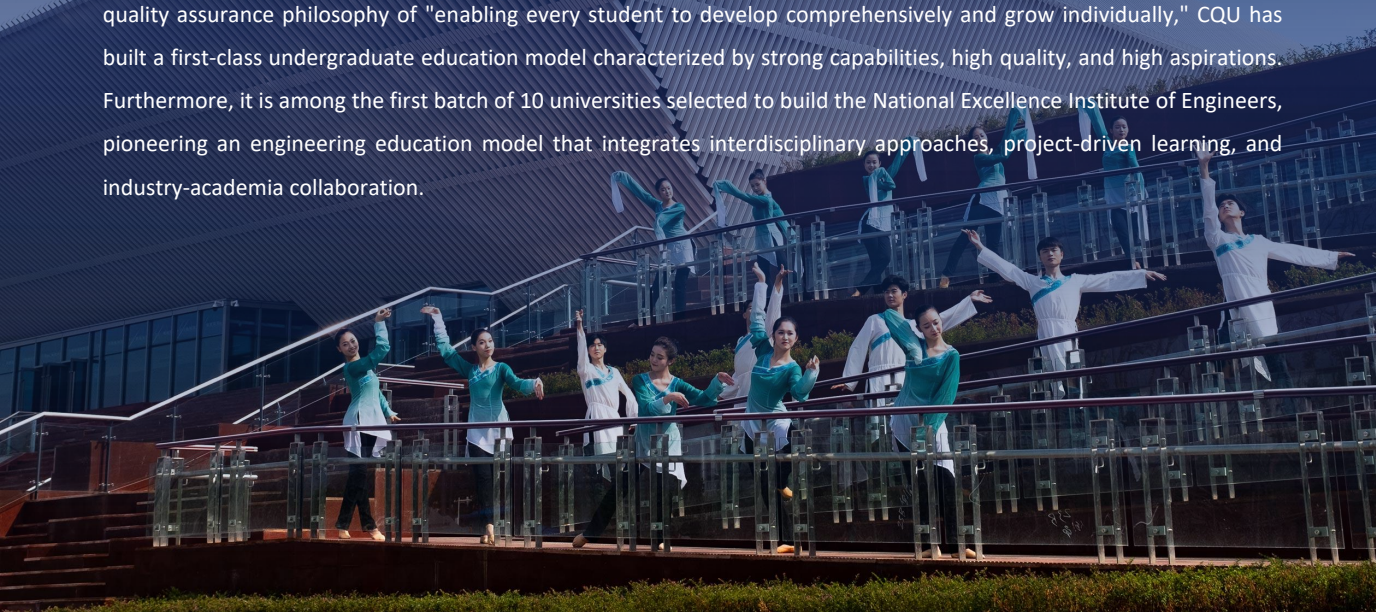
Chongqing University (CQU), established in 1929, developed into a comprehensive university with complete disciplines in liberal arts, science, engineering, business, law, and medicine by the 1940s.

CQU is recognized as one of China's leading universities and has been included in the national 211 Project, 985 Project, and the Double First-Class Initiative—major government programs aimed at elevating selected universities to world-class status.

The university is comprised of the Shapingba Campus (including Campus A, B, and C), the Science City Campus (including the Huxi Campus, the Zhigu Campus under construction, and others), and the National Excellence Institute of Engineers. It is structured into seven academic divisions, including 35 schools and colleges, as well as 9 affiliated hospitals. This comprehensive academic structure covers 12 disciplines, including science, engineering, economics, management, law, literature, history, philosophy, medicine, education, art, and interdisciplinary studies. Furthermore, CQU maintains 34 postdoctoral research stations to support advanced research initiatives.

The university employs over 5,100 faculty and staff members, with more than 3,200 full-time teachers. It is home to over 300 national-level talents, including academicians.

Since its founding, CQU has educated more than 500,000 high-quality talents. Currently, the university has over 53,000 enrolled students, including more than 27,000 graduate students and over 26,000 undergraduates. Guided by the quality assurance philosophy of "enabling every student to develop comprehensively and grow individually," CQU has built a first-class undergraduate education model characterized by strong capabilities, high quality, and high aspirations. Furthermore, it is among the first batch of 10 universities selected to build the National Excellence Institute of Engineers, pioneering an engineering education model that integrates interdisciplinary approaches, project-driven learning, and industry-academia collaboration.





Research and Innovation at the University of Nottingham Ningbo China

Bringing Global Expertise Together to Drive Innovation

ABOUT THE UNIVERSITY

Established in 2004, the University of Nottingham Ningbo China (UNNC) was the first Sino-foreign university approved by China's Ministry of Education to operate with independent legal status and its own campus. Drawing on the University of Nottingham's tri-campus network in the UK, China and Malaysia, UNNC combines international research expertise with interdisciplinary collaboration to advance frontier research, technological innovation and knowledge exchange, supporting industrial development and sustainability.

Research Excellence

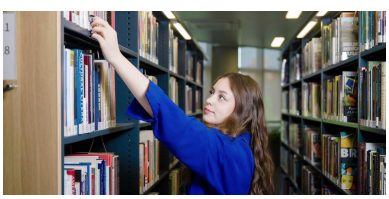
Delivering Quality and Global Impact

Top 1%	54	RMB 360M	56%
Six disciplines in the global top 1%	Scholars in the world's top 2%	In public research funding	Papers internationally co-authored

Six UNNC disciplines rank among the global top 1% in the Essential Science Indicators (ESI), and nine feature in the 2025 ShanghaiRanking's Global Ranking of Academic Subjects. Fifty-four scholars were included in the 2025 list of the world's top 2% of scientists. The University has secured nearly 200 national research projects and more than 140 provincial and ministerial research projects, attracting over RMB 360 million in public research funding. It has also received 35 research achievement awards at municipal level or above from government bodies and industry organisations, spanning science and technology, the humanities and social sciences.

UNNC continues to strengthen international research collaboration. As of May 2026, internationally co-authored publications accounted for 56% of its research papers. Over the preceding three years, UNNC researchers published more than 70 papers in Cell, Nature, Science and their associated journals, reflecting the University's international outlook and interdisciplinary strengths.









Research Strengths

Addressing Scientific Frontiers and Industry Needs

01

Artificial Intelligence and the Digital Economy

Research in intelligent algorithms, data analytics and optimisation supports the development and application of digital twins, logistics scheduling, medical image analysis and AI-assisted drug screening.

02

Advanced Manufacturing and Materials

Expertise in vibration and noise control, advanced materials processing, functional materials and composites supports high-end equipment development, manufacturing process optimisation and improved product performance.

03

Green Energy and Low-Carbon Technologies

Research in electric powertrains, battery materials and thermal management, industrial energy efficiency, water treatment and resource recovery supports the energy transition and greener manufacturing.

04

Health and Medical Technologies

Combining engineering, computing and life sciences, UNNC advances research in medical imaging, health monitoring, pharmaceutical preparation and biomedical materials, exploring new approaches to diagnosis, treatment and health management.

Innovation Platforms

Translating Research into Practical Applications

UNNC hosts an international science and technology cooperation base recognised by China's Ministry of Science and Technology, alongside two provincial key laboratories, two provincial international joint laboratories and three provincial engineering research centres. Through its Ningbo municipal university technology transfer centre, the University connects proof of concept, collaborative R&D and business incubation to support innovation from technical validation through to industry application.

11	70+	RMB 43M	180+
Innovation projects supported	Start-ups incubated to date	Raised by incubated start-ups	Partners across 40 countries

The International Proof of Concept Centre for Future Technologies supported 11 innovation projects in 2025. The Li Dak Sum Incubator has incubated more than 70 start-ups, which have collectively raised RMB 43 million. Certified under the EU|BIC framework, the Incubator connects with more than 180 innovation partners across 40 countries, supporting international technology transfer and helping local ventures access overseas markets.

UNNC welcomes collaboration with universities, research institutes, businesses and government bodies in joint research, technology development, research commercialisation and joint talent development. Through open collaboration, we bring together expertise and resources to address the needs of industry and society.

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