

Global Intelligent Systems Community Converges in Macau: IEEE MESA 2025, CPSI 2025, and IFAC BIKa 2025 Convene to Advance AI and Robotics

From 7–10 November 2025, the intelligent systems community gathered in Macau for a series of co-located international conferences and workshops. The event brought together the 2025 IEEE International Conference on Mechatronic and Embedded Systems and Applications (IEEE MESA 2025), the 2025 International Conference on Cyber-Physical-Social Intelligence (CPSI 2025), and the 2025 IFAC Workshop on Blockchain Intelligence and Knowledge Automation (IFAC BIKa 2025).

Held primarily at the Macau University of Science and Technology (MUST) and the Grand Hyatt Macau, these international gatherings provided a shared environment for cross-disciplinary exchange among scholars, engineers, and industry professionals. The events were supported by leading international organizations, including the Institute of Electrical and Electronics Engineers (IEEE), the Association of Global Intelligent Science and Technology (AGIST), the International Federation of Automatic Control (IFAC), and the Chinese Association of Automation (CAA).

IEEE MESA 2025: Embedded Intelligence for All

Under the direction of General Chair Joseph Hun-Wei Lee, Co-Chair Yisheng Lyu, Technical Program Co-Chair Xiaoxiang Na, and with coordination by Local Arrangement Chair Qinghua Ni, IEEE MESA 2025 was successfully held from 8–10 November 2025 in a hybrid format that combined on site and online participation, centered on the theme “Embedded Intelligence for All”, exploring the convergence of Industry 5.0 and AI in mechatronic systems (Fig.

1). The conference delivered nine hybrid activities, including the opening ceremony and a full slate of technical sessions and forums, featuring more than 30 academic presentations, reflecting both methodological advances and application-driven innovation in mechatronic and embedded systems. The conference highlighted exceptional technical contributions by presenting awards for Best Paper, Best Student Paper, Best Application Paper, and Best Research. To recognize outstanding contributions, the conference presented four paper awards: Best Paper Award, Best Student Paper Award, Best Application Paper Award, and Best Research Award.

CPSI 2025: Bridging Cyber, Physical, and Social Worlds

Led by Steering Committee Chairs Fei-Yue Wang and Ying (Gina) Tang, and Program Chair Hui Yu, with coordi-

nation by Sangtian Guan, CPSI 2025 convened from 7–10 November 2025 (Fig. 2). The conference comprised 18 hybrid activities and more than 60 reports dedicated to the sustainable future of human-machine symbiosis, covering topics such as autonomous agents, digital twins, and social computing. By bridging the gap between cyber spaces, physical systems, and social interactions, the discussions aimed to define the next generation of human-AI symbiosis. The depth of research presented was acknowledged through five distinct honors: Best Conference Paper Award, Best Conference Paper Finalists Award, Best Workshop Paper Award, Best Student Paper Award, and Best Student Paper Finalists Award.

IFAC BIKa 2025: Decentralized Intelligence

Organized under the leadership of



Fig. 1 IEEE MESA 2025 in Macau SAR, China.



Fig. 2 CPSI 2025 in Macau SAR, China.

National Organization Committee Chair Fei-Yue Wang, International Program Committee Editor Juanjuan Li, and Co-Chair Rui Qin, IFAC BIKa 2025 was held from 8–9 November 2025, focusing on the frontiers of decentralized technologies and convening researchers and practitioners at the intersection of blockchain intelligence and knowledge automation (Fig. 3). The workshop offered six hybrid sessions/forums with more than 10 technical presentations, spanning both conceptual advances and applied developments across decentralized auto-nomous/agentive organizations (DAOs), Intelligent Web 3.0, blockchain intelligence applications, knowledge automation in blockchain systems, and decentralized governance. The event concluded by recognizing outstanding contributions with the Best Paper Award and the AGIST Workshop on Decentralized Intelligence Best Paper Award.

Highlights: Distinguished Keynote Speakers

The three co-located international conferences and workshop in Macau featured a distinguished lineup of keynote speakers: Jun Wang (City University of Hong Kong) shared insights on AI-powered planning and control of chiller systems to optimize energy consumption in heating, ventilation, and air conditioning (HVAC)



Fig. 3 IFAC BIKa 2025 in Macau SAR, China.

systems; Petros Ioannou (University of Southern California) addressed management, control, and optimization for vehicles and traffic to advance safety, mobility, and efficiency across connected transportation systems; Paul Werbos—best known for his seminal 1974 dissertation describing the training of neural networks via backpropagation of errors and for pioneering recurrent neural networks—spoke on AI necessity and the technical requirements for a global cybersocial contract. Other distinguished keynote speakers in the lineup

included Ying (Gina) Tang, Xiao Wang, Hequan Sun, and Bai Li.

With the events held in close succession and in nearby venues across Macau, participants benefited from expanded cross-conference interaction—engaging with a broader set of talks and experts, expanding networks, cross-pollinating ideas, and strengthening follow-on collaboration opportunities across the field.

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