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ZHUHAI, CHINA

Special Session 7

Multi-Agent Synergy: Theory, Key Technologies and Industrial Applications

With the rapid advancement of artificial intelligence, large language models, edge computing, swarm intelligence, and the Internet of Things, multi-agent synergy has evolved from a traditional distributed control paradigm into a key technological framework that enables autonomous perception, collaborative decision-making, task allocation, and efficient execution in complex and dynamic environments. In open, dynamic, and heterogeneous network settings, single-agent intelligence faces inherent limitations in perception range, computational capacity, and behavioral robustness. In contrast, multi-agent systems—through information exchange, collaborative learning, and joint decision-making—can achieve distributed autonomy and cross-domain collaboration, thereby significantly enhancing system performance in terms of perception coverage, decision response speed, and task execution efficiency.



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Topic of Interest

- Multi-agent synergy system architecture and protocol design
- Multi-agent task allocation, path planning, and collaborative decision-making methods
- Multi-agent reinforcement learning, federated learning, and swarm intelligence optimization methods
- Distributed optimization and game theory
- Multi-agent consensus control and consensus mechanisms
- Perception and multi-modal information fusion technologies for multi-agent synergy
- Multi-agent dynamic networking, cross-domain interconnection, and ad hoc network technologies

- Communication-sensing-computing-control integrated synergy framework
- Trusted interaction, identity authentication, and privacy protection technologies for multi-agent systems
- Resilient synergy strategies under adversarial and faulty environments
- Multi-agent synergy applications and prototype systems
- Simulation, testing, and validation platforms for multi-agent systems
- Heterogeneous multi-agent collaborative control and formation technologies
- Scalability and interoperability of multi-agent systems
- Communication compression and topology optimization in multi-agent synergy

Important Dates

Submission Due:	2026-July 1st
Notification Due:	2026-July 25
Camera-ready Due:	2026-August 10

Submission



Submission Link:

<https://easychair.org/conferences/?conf=icct2026>
(Please choose Special Session 7)