Special Session 2：Digital Economy-Oriented Artificial Intelligence

Chairs: Di Han, Guangdong University of Finance.

Brief Description of the Session

Nowadays, digital economy (DE) is a key economic development direction, and artificial intelligence (AI) is a critical strategic tool of DE. "AI-assisted economy" has emerged as a new economic paradigm, widely accepted by governments around the world, and is regarded as one of the most important implementations of DE. Thus, the development of digital economy-oriented artificial intelligence (DE-oriented AI) technologies has not only theoretical significance but also practical value. DE-oriented AI technologies are distinct from general AI technologies in that they are theories, methods, algorithms, and software to promote the economic development or transformation in a digital manner.

DE is the main economic form after the agricultural economy and the industrial economy, of which the typical characteristics are (1) treating the data resources as key elements, (2) integrating information and communication technologies, (3) using modern information network as main carrier, and (4) leveraging all-factor digital transformation as an important economic driving force. The viewpoint that is generally accepted by academic and industrial communities is that data, algorithms, and computing power are three essential aspects of AI. In fact, these three elements are connected with the first three characteristics of DE: the data are the core element of both AI and DE; AI algorithms should be built based on the integration of information and communication technologies; and the improvement of computing power needs the support of modern information network to implement cross-cluster computing. The fourth characteristic of DE is precisely the AI's contribution to DE.

Although AI and DE have received increasing attention, there are some bottlenecks for AI applications in DE. For example, how to train an efficient big AI model with relatively low computational resource consumption, how to use advanced AI technologies to intellectualize economic activities, and how to formalize the relationship between DE and AI. Thus, there is a large opportunity to investigate reliable, robust and efficient DE-oriented AI technologies. To share the most recent advances, current challenges and potential applications of Theories and Methods for DE-oriented AI, we are delighted and honored to propose this track of CAIT 2025

Topics

This track may include, but is not limited to, the following topics relevant to Digital Economy-Oriented Artificial Intelligence Technologies:

1. Low-carbon training of AI big models.
2. Construction technologies of smart cities, smart medical, intelligent transportation, and other intelligent fields.
3. Intelligent prediction of financial risk, climate change, and Environmental Social and Governance (ESG) in the era of the digital economy.
4. Big data intelligence, approximation, and green computing technologies for specific economic fields.
5. Intelligent data management and processing methodologies to support digital economy development.
6. Intelligent collaborative scheduling of computing power for the new economic paradigm.
7. AI chip-based computing power improvement strategies for computational economy.
8. AI technologies promote both digital industrialization and industrial digitization.
9. Other AI theories, methods, and algorithms related to the digital economy.

Brief Introduction of Chair and Co-chairs with Photo

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Di Han received his Ph.D. degree in computer science from Macau University of Science and Technology, Macau, in 2018.
During 2011, he has served as a Research Assistant with the Department of Computing, Hong Kong Polytechnic University, Hong Kong, China. He is currently an Associate Professor at Guangdong University of Finance, Guangdong, China. His current research interests include recommender systems, risk management, large language model, and their applications. He has published over 30+ research papers in international conferences and journals.

Dr. Han is a member of CCF, the Reviewer of the Transactions on Knowledge and Data Engineering, Transactions on Knowledge Discovery from Data, Engineering Applications of Artificial Intelligence, International Journal of Machine Learning and Cybernetics, etc.