

Communication Optimization for AI

Session Chair: **Shouxi Luo, Southwest Jiaotong University**



Shouxi Luo received the bachelor's degree in communication engineering and the PhD degree in communication and information systems from the University of Electronic Science and Technology of China, China, in 2011 and 2016, respectively. He is currently an associate professor with Southwest Jiaotong University. His research interests include data center networks, software-defined networking, and networked systems.

Brief Description of the Session Thematic:

In the era of ubiquitous artificial intelligence (AI), the scaling of AI systems across distributed and decentralized environments has become increasingly prevalent for both model training and inference. However, as these systems grow in complexity and scale, efficient communication emerges as a critical performance bottleneck that significantly impacts overall system efficiency. This special session aims to address these pressing challenges by focusing on communication optimization in AI systems, with particular emphasis on bandwidth efficiency enhancement, latency reduction techniques, synchronization overhead minimization, and privacy-preserving data exchange mechanisms.

Related topics for this special session (but not limited to) :

- Compressed communication techniques for distributed AI systems
- Communication-efficient job scheduling and resource allocation strategies for distributed AI systems
- Synchronization optimization in heterogeneous computing environments
- Privacy-aware communication protocols for federated learning systems