Special Issue

Multi-Agent Modal Computing: Synergy, Scalability and Satellite-Earth Collaboration

Message from the Guest Editors

This Special Issue will (a) consolidate emerging theories that unify agent coordination, cross-modal representation learning, and distributed inference; (b) cover system-level innovations enabling on-orbit federated learning, inter-satellite communication-efficient model fusion, and real-time Earth-observation analytics; and (c) highlight practical deployments in disaster response, smart cities, and climate monitoring. By bridging multi-agent systems, modal learning, and satellite computing communities, this collection aims to complement existing research that either treats modality fusion in a single-agent setting or addresses satellite AI without multi-agent synergy. We solicit original contributions on, but not limited to, the following:

- Agent architectures for multi-modal reasoning under partial observability.
- Multi-modal learning in knowledge graph-based, social network, and satellite contexts.
- Multi-modal learning in NLP (e.g., text mining, knowledge graphs, etc.).
- Multi-modal learning in CV (e.g., object detection, super-resolution, video–text retrieval, satellite-related applications, video tracking, etc).
- Communication-efficient consensus algorithms for modal model fusion.

Guest Editors

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