Advanced AI Technologies for Future B5G/6G System

Following the achievements and standardization of 5G, researchers have started to conceptualize paradigms and schemes for 6G networks with the vision of integrating sensing, communication, and computation functionalities. To achieve such functionalities, new wireless technologies (e.g., millimeter-wave/THz frequency bands, reconfigurable intelligent surfaces and smart wireless environments) have appeared that pave the way to 6G applications. However, those technologies requiring precise models for their operation and high computation capability, thereby posing a significant challenge for their design and implementation in beyond 5G (B5G) and 6G systems. To alleviate such challenges, advanced AI techniques, such as deep neural networks (DNN), deep reinforcement learning (DRL), or even large language models (LLMs), have emerged as promising design alternatives. Therefore, the convergence of AI and network components' design is expected to contribute toward a sustainable B5G/6G ecosystem.

This workshop aims to bring together researchers from academia and industry to explore recent advances in AI designs for B5G/6G networks. Possible topics include but are not limited to:

- AI-enabled wireless resource allocation and mobility management.
- AI-enabled energy harvesting, power control and wireless power transfer.
- AI-enabled channel estimation and prediction.
- Multi-access and modulation (NOMA, OTFS, SCMA, etc.) empowered by AI;
- Wave-based neural network design.
- Semantics and goal-oriented communications.
- AI for URLLC communications.
- AI for zero-touch networks.
- AI-based coverage enhancement based on reconfigurable intelligent surfaces.
- AI-based interference avoidance and management techniques.
- Intelligent computation offloading technologies.
- Intelligent wireless spectrum sensing, localization, and signal processing.
- Communication-efficient machine learning techniques (such as LLMs, generative AI, transfer learning, federated learning, and DRL).
- AI-based security and privacy issues in B5G/6G networks
- Testbeds and platforms for supporting AI-based techniques for B5G/6G networks.

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