

# IEEE Internet of Things Journal Special Issue on

## Edge Learning in B5G IoT Systems

Due to the explosive growth of data traffic in Internet-of-Thing (IoT) systems, machine learning and data driven approaches are expected to become a key enabler to fuel the development of beyond 5G (B5G) wireless networks. Standard machine learning approaches require centralizing the training data on a single data center such as a cloud. However, due to privacy constraints and limited communication resources for data transmission, it is impractical for all wireless devices to transmit all of their collected data to a data center that can use the collected data to implement centralized machine learning algorithms for data analysis and inference. This has led to the emergence of a fast-growing research area, called edge learning, which can deeply integrate the two major areas: wireless communication and machine learning. Thereby, we seek to bring together researchers from academia and industry to introduce to the communications community the latest advances in edge learning and point to readers many promising research opportunities. An outline of topics on which we plan to solicit submissions is as follows:

- Network architectures and protocols for edge learning in B5G IoT systems
- Distributed optimization for improving the performance of edge learning
- Semantic communication with edge learning for IoT systems
- Centralized and distributed data storage for edge learning
- Decentralized transmission optimization for edge learning in IoT systems
- Ultra-low latency edge learning and distributed inference in IoT systems
- Massive access and over-the-air computation for edge learning in IoT systems
- Energy-efficient machine learning over IoT systems
- Edge learning for user behavior analysis and inference in IoT systems
- Privacy and security issues on edge learning in IoT systems
- Experiments and testbeds on edge learning in IoT systems

### **Important dates**

Submission deadline: **April 15th, 2024(Extended)**  
First Round Review Due: May 15th, 2024  
Revision Due: June 15th, 2024

Second Round Review: July 15th, 2024  
Final Manuscript Due: August 15th, 2024  
Publication Date: September 2024

### **Submission Guidelines:**

All original manuscripts to the IEEE IoT-J must be submitted electronically through IEEE Manuscript Central, <http://mc.manuscriptcentral.com/iot>. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at <http://ieeetj.org/guidelines-for-authors/>.

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