IEEE IoT Journal Special Issue on
Low-Carbon Sustainable Computing Enabled Artificial Intelligence of Things

Artificial Intelligence of Things (AIoT) integrates Artificial Intelligence (AI) and Internet of Things (IoT), has been supporting the technological revolution in many fields, such as intelligent industrial manufacturing, smart healthcare, smart agriculture, intelligent business decision-making, and so on. In specific, AIoT systems realize real-time data acquisition and analysis through massive IoT sensors and communication network, and then perform high-level tasks such as pattern recognition and decision recommendation on cloud or edges. However, the above AIoT systems require lots of computing resources and electricity consumption as support, which inevitably leads to a lot of carbon emissions and energy consumption. Currently, the world is facing the serious climate and energy crises, the sustainable development and carbon neutrality has undoubtedly become the direction of the common efforts of all mankind. Considering the IoT-related computing aspects, the tremendous connected IoT sensors, edge devices, software systems, networks, data storage, data analytics, and digital services constitute the industrial digital infrastructure. To achieve carbon neutrality, the low-carbon sustainable computing for the digital infrastructure of AIoT systems is of paramount importance and has great potentials. It is a fundamental technology towards energy-efficient and data-efficient AIoT systems and applications. Thus, this special issue aims at soliciting high-quality original papers demonstrating energy-efficient and data-efficient sustainable computing in AIoT systems.

Topics of interest include, but are not limited to, the following:

- Multi-source IoT data fusion and power-efficient algorithms for AIoT
- Multimodal IoT data quality assessment and data-efficient algorithms for AIoT
- Parallel & distributed computing for low-carbon sustainable AIoT applications
- Resources offloading & scheduling strategy for sustainable AIoT applications
- Nature-inspired optimization and evolutionary algorithms for sustainable AIoT
- Model acceleration and edge computing for low-carbon efficient AIoT applications
- Carbon footprint of software, service, application in digital infrastructure for AIoT
- Carbon-aware modeling techniques towards quantifying carbon footprint for AIoT
- Power consumption measurement of networks for green communications in AIoT
- Special sustainable AIoT applications on smart transportation, intelligent plant, software optimization, smart agriculture, smart city, and power scheduling

Important Dates:

Submission Deadline: June 1st, 2024

First Round Review Due: July15th, 2024

Revision Due: August 15th, 2024

Sec. Reviews Due/Notification: September 15th, 2024

Final Manuscript Due: October 15th, 2024

Publication Date: November 2024

Submission Guidelines:

All original manuscripts or revisions to the IEEE IoT Journal must be submitted electronically through IEEE Manuscript Central, http://mc.manuscriptcentral.com/iot. When the authors reach the "Article Type" step in the submission process, they should select SI: Low-Carbon Sustainable Computing Enabled Artificial Intelligence of Things. Solicited original submissions must not be currently under consideration for publication in other venues. Author guidelines and submission information can be found at http://ieee-iotj.org/guidelines-for-authors/.

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