

IEEE Internet of Things Journal Special Issue on “AI-Enabled Internet of Dependable and Controllable Things”

Advances in information communication technologies have given rise to the Internet of Things (IoT) that will play an increasingly important role in our daily lives. In IoT, the massive number of deployed IoT devices (sensors, actuators, etc.) will be connected to collect data related to energy, transportation, city infrastructure, manufacturing, healthcare, and public safety, among others, supporting numerous smart-world systems. Moreover, Industry 4.0 will be supported by smart manufacturing and Industrial IoT, which enable the interconnection of industrial sensors, actuators, and control systems to improve productivity, resource efficiency, intelligence and dependability in industrial manufacturing.

At the same time, machine learning has shown significant success in transforming massive and complex datasets into highly accurate knowledge as output, which can greatly facilitate analysis, intelligence, decision-making, and automation across diverse systems. Combined with advances in big data analytics, big computing, and big networking technologies, machine learning provides a mechanism for carrying out big modeling and intelligence, and has achieved great success in a number of fields. Despite these achievements, the leveraging of machine learning in IoT faces significant challenges to achieving artificial intelligence-enabled Internet of dependable and controllable things, and must take into account the exceptional requirements for connectivity, latency, scalability, accessibility, security, and resiliency that IoT systems pose. The seamless integration of machine learning into IoT systems thus creates opportunities for novel research and necessitates interdisciplinary efforts to solve these challenges.

The papers in this special issue will focus on state-of-the-art research and challenges in the foundations and applications of synergizing machine learning in IoT. In this special issue, we shall solicit papers that cover numerous topics of interest that include, but are not limited to:

- Machine learning for theoretical foundation and models for IoT
- Machine learning for IoT system deployment and operation
- Machine learning for IoT assisted industrial automation
- Machine learning-enabled real-time IoT data analytics
- Machine learning-enabled sensing and decision-making for IoT
- Machine learning-enabled ultra-low latency and highly reliable communication for IoT
- Machine learning-enabled cloud/edge computing systems for IoT
- Evaluation platforms and hardware-in-the-loop testbeds for machine learning-enabled IoT
- Machine learning for IoT security and privacy

Important Dates

Submissions Deadline: May 1, 2020

First Reviews Due: July 15, 2020

Revision Due: September 1, 2020

Second Reviews Due/Notification: October 1, 2020

Final Manuscript Due: October 15, 2020

Publication Date: 2020

Submission

All original manuscripts or revisions to the IEEE IoT Journal 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://iee-iotj.org/>.

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