

IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on “Intelligent Computing for Big Data in Consumer Internet of Things”

Theme:

The rapid development of the Consumer Internet of Things (CloT) has led to significant changes in the nature of the data it generates. In the past, CloT data was typically small, such as sensing data. However, in recent years, with the increasing use of multimedia such as video and images, data in CloT has become larger and more diverse. Additionally, data is now coming from not only homogeneous, static CloT devices, but also from heterogeneous, dynamic devices. These changes have significant implications for the performance of CloT systems, which now require data-intensive and time-consuming processing. As the scale of CloT systems continues to grow, the current solutions for big data processing will become insufficient in meeting the needs of CloT applications in terms of performance, cost, energy consumption, privacy, and security. While intelligent computing has demonstrated its strong capability to overcome the bottlenecks in broader Internet of Things (IoT), its potential to optimize big data processing in CloT has not been fully explored yet.

This special section aims to address the challenges of big data processing in the CloT through intelligent computing solutions. It will bring together researchers from various fields to examine innovative computing devices, models, algorithms, and systems that utilize artificial intelligence and advanced computational techniques for big data processing and analytics in CloT. Specifically, we are looking for innovative and interesting contributions on hardware and software solutions that utilize technologies such as deep learning, reinforcement learning, ambient intelligence, pervasive computing, cognitive computing, collaborative human-computer computing, and swarm intelligence for big data computing in CloT.

Topics of interest in this Special Section include (but are not limited to):

- Theoretical and practical foundations of intelligent computing for big data in CloT, including models, architectures, and algorithms
- Hardware and device design for intelligent big data computing in CloT
- Networking designs and protocols for supporting intelligent big data computing in CloT
- Software and systems for intelligent big data computing in CloT
- Scheduling of data flows, computing tasks, and resources for big data in CloT
- Cloud-edge orchestration for big data computing in CloT
- Intelligent computing for big data privacy, security, and ethics in CloT.
- Emerging technologies such as blockchain and their potential for use in intelligent computing for big data in CloT
- Applications of intelligent computing for big data in CloT
- Trends and emerging technologies in intelligent computing for big data in CloT

Important dates:

- End of submission of Manuscripts: **April 30, 2023**
- Expected publication date (tentative): March 2024

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Instructions for authors:

Manuscripts should be prepared following guidelines at: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html> and must be submitted online following the IEEE Transactions on Consumer Electronics instructions: <https://ctsoc.ieee.org/publications/ieee-transactions-on-consumer-electronics.html>. During submission, the Special Section on **“Intelligent Computing for Big Data in Consumer Internet of Things”** should be selected.