

IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on “Secured and Privacy-preserved Intelligent Consumer Internet of Things”

Theme:

The advancements in hardware and sensor technologies have made integrated circuits (ICs) smarter, which are capable of sensing, processing, and transmitting application-specific data. These ICs are embedded in consumer devices, which makes them smarter. These smart devices are connected via wireless links and have given rise to an emerging technology, the Consumer Internet of Things (CIoT). The CIoT flourishes at a rapid speed by connecting smart devices and objects. By the end of 2030, it is expected that there will be 50 billion things connected to the Internet. The CIoT will collect data related to energy, transportation, healthcare, public safety, and other aspects of consumer lives in a smart city scenario. The collected data provides immense opportunities for valuable information mining for numerous applications. For example, artificial intelligence (AI)-based CIoT will enable things to perform human-like thinking and reasoning. In this context, machine learning (ML) and deep learning (DL), Computer Vision (CV), and Image Processing (IP) are considered key enabling technologies for making things smarter by providing information inferences and intelligence to them. The CIoT brings everything closer and connects the whole world, opening various windows to different security threats that also put the user's privacy at stake. Because anyone can access certain CIoT devices from anywhere without the user's permission. The scope, content, and objective of this special issue (SI) match IEEE Transactions on Consumer Electronics (TCE). The SI discusses the underlying consumer electronic devices and the technological advancement using network sciences that allow it to be used in integrated and emerging applications such as IoT, AI, ML, and DL technologies. Furthermore, the contents of this SI have not yet been the central focus of any of the IEEE publications.

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

- Design and Implementation of intelligent sensors for CE
- Novel theories, concepts, and Architecture of intelligent CIoT
- Human-centric design for CIoT
- Privacy and Security Issues in the Convergence of AI and CIoT
- ML/DL-enabled Attacks and Defense mechanisms at Hardware Level for CIoT
- Security and privacy regulatory compliance in CIoT
- Adversarial Attacks and Defense in IoT Systems
- ML/DL-enabled real-time CIoT data analytics
- AI-enabled cloud/edge computing systems for CIoT systems
- AI for CIoT security and privacy
- Ethical considerations in the CIoT

Important dates:

- End of submission of Manuscripts: March 31, 2024
- Expected publication date (tentative): 4th quarter 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 **“Secured and Privacy-preserved Intelligent Consumer Internet of Things”** should be selected.