

IEEE Transactions on Consumer Electronics

Call for Papers

Special Section on “Trustworthy Artificial Intelligence of Things for Consumer Electronics”

Theme:

Consumer electronics encompass a wide range of electronic devices for personal use, entertainment, communications, and recreation, transforming modern life with convenience and connectivity. With embedded sensors, actuators, and communication technologies in these devices, the Internet of Things (IoT) has emerged as a transformative paradigm in the domain of consumer electronics, facilitating the interconnectivity of various smart consumer devices and enabling them to interact with users and the surrounding environment. Meanwhile, Artificial Intelligence (AI) has gained recognition as a powerful tool, facilitating efficient data analysis and accurate decision-making to enhance service provisions across diverse domains. The integration of AI capabilities into IoT-enabled consumer electronics empowers them to autonomously analyze data, recognize patterns, learn from user interactions, and make intelligent decisions without constant human intervention. As ongoing advancements in AI of Things (AIoT) technology drive innovation in this field, consumer electronics are poised to deliver personalized experiences, enable predictive analytics, and significantly shape the future landscape of human-computer interactions, which prompts AIoT for consumer electronics to become a focal point of research, development, and academic exploration. However, there are still barriers to widespread AIoT deployment in consumer electronic systems, including the influence of real-world uncertainties and potential dangers, e.g., unjust discrimination or bias, privacy infringement, fraudulent practices and social or economic exclusion. Therefore, it is critical to developing trustworthy AIoT for consumer electronics, ensuring that the services provided are explainable, reliable, safe, fair, transparent, and respectful of human values and rights.

This special section (SS) focuses on cutting-edge techniques that involve incorporating transparency, accountability, fairness, robustness, and ethical considerations into trustworthy AIoT design, deployment, and governance for consumer electronics. The objective of this SS is to assemble high-quality research papers on emerging theories, architectures, protocols, and algorithms for solving the challenging problems pertinent to trustworthy AIoT for consumer electronics.

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

- Explainable and transparent AIoT for consumer electronics
- Robust and reliable AIoT-enabled consumer electronics
- Privacy preservation in AIoT for consumer electronics
- Fairness and bias mitigation in AIoT for consumer electronics
- Human-centric design in AIoT consumer electronics
- Trust and trustworthiness assessment in AIoT for consumer electronics
- Ethical considerations in AIoT consumer electronics
- Explainable anomaly detection in consumer electronics
- Sustainable AIoT solutions for consumer electronics
- AIoT testing and validation for consumer electronics
- Case studies of trustworthy AIoT implementation in consumer electronics

Important dates:

- End of submission of Manuscripts: **April 30, 2024**
- Expected publication date (tentative): 1st quarter, 2025

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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 **“Trustworthy Artificial Intelligence of Things for Consumer Electronics”** should be selected.