

# IEEE Transactions on Consumer Electronics

## Call for Papers

### “Tactile Internet for Consumer Internet of Things: Opportunities and Challenges”

#### Theme:

The Tactile Internet (TI) is a logical transition of the Internet, which has progressed from a static, text-based Internet to a multimedia mobile Internet and finally to a Consumer Internet of Things (IoT). The major requirement of any TI applications is low latency, fast transit intervals, high availability, and a high level of security. For instance, latency requirement in Human to Machine (H2M) interactions may vary from  $< 10$  ms up to tens of milliseconds and round-trip latency of 1 ms. This necessitates tactile applications close to end users to minimize delays. Edge Computing (EC) is a decentralized platform that offers cloud computing functionalities at cellular base stations near users, saving energy and time on backhaul transmission to cloud servers. The widespread deployment of ECs in potentially poorly secured locations complicates end to end security of consumer IoT systems. Furthermore, the computing and energy limitations in ECs make it difficult to deploy heavy-duty security mechanisms. To address these limitations, new technologies are required which integrate edge, cloud, AI, and consumer IoT in a manner that would satisfy stringent delay and throughput, ensure acceptable operation in the face of attacks, misconfigurations, and faults, and ensure usability of the service

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

- Human-machine interface issues in TI
- Automated configuration and software updates of TI interfaces
- Misconfiguration detection and mitigation techniques for TI
- Interoperability of multivendor TI IoT devices
- Maintainability and fault tolerance in TI interfaces
- Latency and jitter issues in TI interactions
- Network overlays and virtualization for TI applications
- Automated service composition for TI applications
- Protocol verification for TI services
- AI-driven consumer IoT applications
- Distributed Edge-based AI for TI and Consumer IoT.
- Trustworthy AI systems for TI and Consumer IoT.
- Security and privacy in TI-driven Consumer IoT.
- Long-haul network architecture for TI
- Experimental prototyping and testbeds for TI.
- Edge and Fog networking issues for TI
- Threat detection and mitigation in TI-driven Consumer IoT.

### Important dates:

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

### Guest Editors:

- ♦ Dr. Prabhat Kumar, LUT University, Lappeenranta, Finland, email: [prabhat.kumar@lut.fi](mailto:prabhat.kumar@lut.fi)
- ♦ Prof. Alireza Jolfaei, Flinders University, Adelaide, Australia, email: [alireza.jolfaei@flinders.edu.au](mailto:alireza.jolfaei@flinders.edu.au)
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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 **“Tactile Internet for Consumer Internet of Things: Opportunities and Challenges”** should be selected.