

Special Issue

Emerging Sensor Technologies for Enhancing IoT Security and Privacy

Message from the Guest Editors

The rapid proliferation of the Internet of Things (IoT) has created unprecedented opportunities across healthcare, transportation, smart cities, and industrial systems. However, the massive deployment of heterogeneous and resource-constrained devices has also introduced critical challenges in ensuring data security, privacy, and trust. Emerging sensor technologies—when combined with advances in artificial intelligence, large language models (LLMs), and autonomous agent frameworks—are reshaping how IoT ecosystems detect threats, preserve privacy, and adapt dynamically to evolving cyber risks. This Special Issue seeks contributions that address this interdisciplinary frontier. Topics of interest include secure and privacy-preserving sensing architectures, lightweight cryptographic and authentication schemes, intelligent anomaly detection, trustworthy data aggregation, and AI-enabled decision-making at the edge. We especially welcome works that integrate LLMs, multi-agent systems, or federated learning to enhance real-time IoT security, as well as cross-layer approaches that combine sensing, networking, and application-level safeguards.

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Message from the Editor-in-Chief

Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. *Sensors* organizes Special Issues devoted to specific sensing areas and applications each year.

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