

## Special Issue

# Next-Generation IoT Sensor Systems: Integrating Distributed Intelligence and Decentralised Trust

### Message from the Guest Editor

The rapid evolution of IoT sensor systems demands integrated solutions for trustworthy, intelligent sensing across industrial, environmental and urban applications. Next-generation architectures require embedded AI capabilities—such as federated learning and neuromorphic computing—to enable autonomous, real-time decision-making at the edge while maintaining cryptographic data integrity and resilience against emerging threats such as model inversion attacks or sensor spoofing. This convergence necessitates novel approaches to AI-driven sensor intelligence, including verifiable neural networks and adaptive calibration algorithms, coupled with distributed trust mechanisms like lightweight blockchain attestation and zero-knowledge proofs. These solutions must address critical challenges of scalability in massive sensor deployments, privacy-preserving data fusion, and security in distributed sensing environments with heterogeneous devices and protocols.

This Special Issue seeks cutting-edge research on integrating trusted AI with IoT sensor systems. Original research, case studies, and reviews are welcome.

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### Guest Editor

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### Deadline for manuscript submissions

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