

CALL FOR PAPERS

IEEE Sensors Journal Special issue on

Artificial Intelligence-based Sensors for Next Generation IoT Applications

The path towards next-generation IoT application, including industrial cyber-physical systems (CPSs), is fundamentally characterized by sensors based on artificial intelligence (AIS). They are typically characterized by onboard intelligence and the ability to communicate collaboratively or with the broader internet. Sensors enable the IoT by collecting data for smarter decisions. To ensure the high level of automation required in today's smart IoT applications, sensors, incorporated into nodes, must be efficient, intelligent, context-aware, reliable, accurate and connected. Sensors must also be robust, safety- and privacy-aware for the humans interacting with them. In conjunction with advanced artificial intelligence (AI) technologies, fantastic possibilities emerge to detect, identify, and avoid performance degradation, as well as to discover new patterns and knowledge from complex sensor datasets, which can promote product innovation, improves operation level and expand novel business models. However, when integrating AI, there are still some open issues, such as efficiency, accuracy, privacy, data trustworthiness, quality etc., that need to be addressed.

It is intended that this Special Issue solicits discussions of best practices of the latest innovations and applications of AI in the domain of IS for future IoT application. The topics of interest include, but are not limited to:

- Surveys of AIS devices for IoT applications.
- AIS technologies for IoT applications.
- Intelligent multi-sensor modules.
- Deep and reinforcement learning for smart sensing.
- AI-based sensing technologies and applications for industrial CPSs
- Data pre-processing and transmission techniques in AIS for IoT.
- Smart signal conditioning algorithms for IS.
- Smart interference nullifying techniques.
- Cost-effective design of AIS.
- AI-empowered self-configuration in sensors for smart IoT applications.
- Self-diagnostic and self-healing techniques in AIS for smart IoT applications.
- AIS integration for future IoT.
- AIS in health informatics.
- AI models for sensor networks
- Clustering and classification algorithms for sensor networks.
- Big-data analytics for data processing from sensor networks.
- AI-empowered sensing for smart cities/grid/healthcare
- AI-empowered sensing for intelligent transportation systems
- AI-empowered sensing for smart factory
- AI-based advanced data analytics for cloud-integrated CPSs
- Applying AI-empowered sensing to industrial scenarios
- Novel applications of smart sensing and AI for CPSs

Solicited and invited papers shall undergo the standard IEEE Sensors Journal peer review process. All manuscripts must be submitted on-line, via the IEEE Manuscript Central™, see <http://mc.manuscriptcentral.com/sensors>. When submitting, please indicate in the "Manuscript Type" roll down menu, and also by e-mail to Ms. Leigh Ann Testa, testa.l@ieee.org, that the paper is intended for the "AI-based Sensors for Next Generation IoT Applications" Special Issue. Authors are particularly encouraged to **suggest names of potential reviewers** for their manuscripts in the space provided for these recommendations in Manuscript Central. For manuscript preparation and submission, please follow the guidelines in the Information for Authors at the IEEE Sensors Journal web page, <http://www.ieee-sensors.org/journals>

Deadlines:

- Manuscript Submission: December 30, 2020
- Notification of Acceptance: July 25, 2021
- Final Manuscript published in IEEE Xplore: December 30, 2021

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