Editorial

Sensors and AI

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Welcome to the inaugural issue of *Sensors and AI* (Artificial Intelligence). It is my great pleasure and honor to serve as the Editor-in-Chief and to be the founder of the new journal *Sensors and AI* (*SAI*). We are delighted with and highly grateful to many colleagues and friends with diversified expertise in the areas of sensors and AI worldwide to support the journal and to serve on our editorial board. We are also immensely grateful to the tremendous support from our publisher, Scilight Press, Australia.

The research and development of sensor technologies and AI have made rapid and significant progress in the past decades. Sensors have become smaller, lighter, cheaper, more accurate and more energy-efficient, enabling their usage in everything from small consumer devices to large industrial automation systems. Advances in sensor signal processing and multi-sensor fusion significantly enhance the extraction of meaningful patterns and noise reduction, providing cleaner data for AI algorithms. In the meantime, many innovative new AI algorithms, such as deep learning and transfer learning, enable AI systems with more accurate predictions and extract more meaningful features from sensor data.

The fusion of sensor technologies and AI has reshaped our perception and interaction with the world. Sensors are the bridge between the physical world and the digital realm, obtaining data from various environments. When integrated into AI, this data transforms from simple measurements into insightful information for intelligent decision-making and smart autonomous systems. For example, in healthcare, AI-driven biosensors can effectively monitor patient vitals in real time and diagnose/predict diseases based on subtle physiological changes; in autonomous vehicles, sensors detect nearby objects and AI systems predict their movement to ensure safe navigation; in manufacturing, intelligent sensors monitor the performance of machines and equipment for predictive maintenance and reduced downtime; in agricultural, intelligent multi-sensor fusion systems can monitor plant growth, optimize water/fertilizer usage and predict plant diseases, resulting in better products. The integration of sensor technologies and AI has led to significant advancements in many areas such as robotics, autonomous driving, environmental monitoring, smart agriculture, smart transportation, smart healthcare, smart manufacturing, and smart cities. However, there are still many challenges in the areas of sensors and AI, such as AI model interpretability, latency and efficiency of AI algorithm computation, sensor data reliability and accuracy, data security and privacy management, and the creation of uniform frameworks for seamless data integration across various sensor platforms.

Sensors and AI is an interdisciplinary, peer-reviewed open access journal dedicated to the exploration and dissemination of cutting-edge theoretical and practical articles in the general areas of sensor technologies and AI, with a focus on the interdisciplinary areas of sensor technologies and AI. The journal seeks to publish articles that deal with the theory, design, analysis, evaluation, and applications of sensor technologies and AI, ranging from sensor design and development, data analysis, to software/hardware development of various intelligent and/or sensor-based systems.

Sensors and AI encourages submissions that present novel methodologies, significant empirical studies, and comprehensive reviews, which contribute to the advancement of sensor technologies and AI. The journal welcomes high-quality original research articles, review papers, communications, and technical notes on the following topics, but are not limited to: innovations in sensor design and fabrication; miniaturization and integration of sensor systems; development of multi-sensor systems and sensor networks; multi-sensor fusion and applications; algorithms for sensor data interpretation; wearable and implantable sensors, devices, and electronics;

sensor networks; data fusion and integration techniques for heterogeneous sensor data; smart cities and intelligent transportation systems; biomedical sensing; environmental monitoring and disaster management; internet of things (IoT); computer vision; machine learning; intelligent big data analytics, intelligent complex networks; intelligent automation and control systems; intelligent robotics; intelligent decision-support systems; human-computer Interaction; addressing challenges in AI and sensor interoperability; ensuring security and privacy in AI-driven systems; scalability and efficiency in large-scale sensor deployments; theoretical advancements in AI for sensor systems; application of AI in various domains; and AI techniques in sensor data analysis.

This journal aims to provide a platform for all experts, professionals and scholars with creative contributions to get together and share some inspiring ideas and accomplish great achievements in the general fields of sensor technologies and AI.

Conflicts of Interest

The author declares no conflict of interest.