SPECIAL ISSUE ON REDEFINING PERCEPTION: APPLICATIONS OF ARTIFICIAL-INTELLIGENCE-DRIVEN SENSOR SYSTEMS: PART 2

PREFACE

Artificial intelligence and advanced sensor technology are changing the way we understand and interact with our surroundings. I am pleased to introduce the second part (Part 2) of our special issue, "Redefining Perception: Applications of Artificial-intelligence-driven Sensor Systems." This issue includes eight original papers that highlight the range, creativity, and influence of AI-driven sensor systems in various scientific and engineering fields.

In the first paper, Svamivastu and Maleesee explored how architectural design and structural analysis are used to study the central tower cluster of Angkor Wat. This work shows how sensor data and computational tools can uncover new details about historical buildings. In the paper written by Thanakit *et al.*, the authors describe the use of a fluorescent compound from a cyanoacrylic-acid-based chemosensor to detect zinc ions, demonstrating how to enhance chemical sensing for environmental monitoring.

Some papers are focused on using machine learning to improve how we interpret sensor data. In the paper written by Pomthong and Gullayanon, a method that uses machine learning to predict initial values from two-dimensional features in areal density measurement is described. Tangtisanon and Grodniyomchai introduce a portable electronic nose that uses multiple machine learning models to monitor food spoilage in real time, a promising step forward for food safety.

This issue also covers the use of sensor systems in security and simulation. An intruder detection system that uses ultrasonic technology to monitor entrances is explained in the paper written by Janů and Kučera. In the paper written by Rasmidatta and Sooraksa, the BioSim Incubator, a simulation platform for egg incubation that connects sensor data with models of biological processes, is described. In the area of education and simulation, the simulator presented in the paper written by Preedanont and Sooraksa uses robot arms to help students practice eye–hand coordination, supporting STEM education. Atayagul and Sooraksa introduce a platform for flight dynamics simulation that uses physics and sensor data, showing how to improve tools in training and research.

Together, these eight papers show how AI-driven sensor systems are changing the way we understand and interact with complex environments. I sincerely thank all the authors for their important contributions to this issue. I also thank Ms. Tomoko Tanabe from the Editorial Department of *Sensors and Materials* for her help during the editorial process. I am grateful to the Editor-in-Chief and the editors for inviting me to be a guest editor.

I am honored to present this special issue and believe that the research it contains will encourage more exploration and innovation in intelligent sensing.

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