Special Issue on Innovations in Multimodal Sensing for Intelligent Devices, Systems, and Applications

Preface

Multimodal sensing has become an important foundation for the development of intelligent devices, systems, and practical applications. By integrating complementary information from different sensing modalities, such as optical, acoustic, mechanical, chemical, biological, and wearable sensors, multimodal sensing technologies can significantly improve the accuracy, robustness, and context-awareness of intelligent systems operating in complex real-world environments.

This special issue focuses on recent innovations in multimodal sensing, including novel sensor devices, advanced sensing materials and fabrication techniques, data fusion methods, vision-language sensing, integrated sensor systems, and their applications in industrial automation, smart manufacturing, medical diagnostics, healthcare monitoring, robotics, biotechnology, environmental monitoring, and other intelligent sensing scenarios. These studies highlight the growing importance of sensing intelligence in bridging device-level innovation, material advances, computational methods, and real-world applications.

After a rigorous review process, twelve papers were selected for publication in this special issue. We hope that these papers will provide useful insights for researchers and practitioners working in sensing technologies, intelligent devices, multimodal systems, and related application fields.

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Jiahui Yu
Zhejiang University, China

Kairu Li
Shenyang University of Technology, China

Yinfeng Fang
Hangzhou Dianzi University, China

Chin Wei Hong
Tokyo Metropolitan University, Japan

Zhiqiang Zhang
University of Leeds, U.K.