

**Special Issue on  
Intelligent Sensing and Analysis for Human–Machine Interaction in Healthcare,  
Biomedical Engineering, and Human-Centered Industries**

Call for Papers

In the domains of healthcare, biomedical engineering, and other human-centered industries, the incorporation of intelligent sensing and analytical methodologies based on human–machine interaction (HMI) marks a transformative progression in the enhancement of supportive systems, assistive devices, and medical robotics. An optimal HMI system must be intuitive, effective, and user-friendly, because it depends on the quality of communication that occurs during human–machine engagement. The synergy of innovative sensory technologies and adaptive systems, integrated with sophisticated computational strategies, is imperative for developing interfaces that interact with users in a seamless and natural way. The advent of artificial intelligence and machine learning innovations in recent years has propelled the capabilities for multimodal sensing and the synthesis of expansive datasets, with deep learning employed to amplify our comprehension of human intentions and the understanding of human behaviors, thereby advancing the adaptive nature of machine reactions. Such advancements promote a subtle and bidirectional flow of feedback in real-time exchanges. In specialized sectors such as assistive robotics, medical instrumentation, and systems engineering within the biomedical field, the significance of extracting insights through both contact and remote sensing modalities, as well as the interpretation of sensory data, is highlighted in the research community. The focus of this Special Issue is to publish high-quality scholarly articles and to provide a reference for applications in areas such as healthcare, biomedical engineering, and other human-centered industries.

**Scope:**

- Human behavior sensing and understanding
- Wearable sensors for healthcare
- Biomedical imaging sensing and interpretation
- Data-driven AI for intelligent sensing systems
- Sensory communication in human-centered industries
- Object recognition for user-centric applications
- Environment sensing and reconstruction for user-centric applications
- Non-contact sensing technologies and analytical methodologies
- Multimodal sensing technologies and sensory data fusion

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**Submission due date:** July 31, 2024

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