

Special Issue on
Multisensor-Based Activity Recognition in Healthcare Systems

CALL FOR PAPERS

Many types of sensors are used in human activity recognition systems to assist in the prevention, management, and treatment of patients. Image-based data is usually analyzed for visual activity monitoring as such data is more developed in terms of spatial and temporal information than other types of sensor-based data. However, image-based data presents numerous challenges related to complex data processing and high dataset scarcity. These limitations can be overcome by integrating camera data with body sensor data. This can facilitate the recognition of continuous human activity and help monitor the behavior of patients who need round-the-clock care, such as the elderly. Certain imaging cameras (visible, infrared (IR), etc.) can be exploited for the purpose of activity recognition in healthcare, such as IR cameras that can translate thermal energy into visible light in areas of low lighting, such as a patient's bedroom. In addition to activity recognition, sensors can also be used for physiological condition monitoring, with electrocardiogram (ECG) sensor data enabling the continuous heart status monitoring of patients during sport activities.

To date, activity recognition methods have mainly been based on red, green, blue (RGB) video data or accelerometer-based time-series data. However, the integration and fusion of different types of sensor data is expected to enhance the performance of modern healthcare systems. For instance, the combination of accelerometer data with gyroscope data will ensure more effective system performance than either dataset used individually in human activity recognition systems.

This special issue therefore aims to gather original research articles and review articles that cover the challenges and applications of signal processing and analysis for human activity recognition in healthcare systems, with particular emphasis on multisensor-based activity recognition.

Potential topics include but are not limited to the following:

- ▶ Sensor-based activity detection and recognition in healthcare—methodologies and case studies
- ▶ Sensor-based physical activity recognition and monitoring in rehabilitation
- ▶ Signal processing techniques related to sensor-based activity analysis in healthcare
- ▶ Wearable sensors and contactless devices related to activity analysis
- ▶ Sensor-based fall detection for elderly people
- ▶ Datasets related to sensor-based activity analysis in healthcare
- ▶ Machine learning algorithms related to sensor-based human activity recognition in healthcare
- ▶ Sensor-based systems for patient behavior analysis in healthcare
- ▶ Internet of Things (IoT) for patient monitoring in remote healthcare
- ▶ Multimodal data fusion for activity study in healthcare

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jhe/cvss/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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