Wireless Communications and Mobile Computing

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Special Issue on

Gesture-Based Interfaces for Recognition and Control

CALL FOR PAPERS

Gesture control should be considered as a key element in Industry 4.0 and Industrial IoT (IIoT). As the capacity for machines to extend human capabilities continues to grow, the communication channels used must also expand to control how systems work and how tools operate. By allowing machines to interpret nonverbal commands such as gestures, further accuracy can be obtained than using touchscreens, leading to an extension of capabilities and productivity.

In this scenario, wireless sensor networks or infrastructure-based interfaces can enable the acquisition of the movements and postures of the human body by sensing gestures. Using the signals obtained from different sensors (motion, positioning, audio, illumination, visual, etc.) on different parts of the body or infrastructure, a wide range of applications can be controlled. These applications include home automation, industry, sign language recognition, navigation and manipulation in virtual environments, automotive manufacturing, and control for robotics. Industrial actuators such as industrial or cooperative robots are a perfect example of devices that can be controlled by gestures. The hand is the most easily used interface and is a medium capable of various formations due to its high degree of freedom. Therefore, the hands are a logical choice for gesture recognition because of their dexterity and intricate movements.

The aim of this Special Issue is to collate original research articles, as well as review articles, discussing the ever-increasing challenges in deploying gestural interfaces using wireless sensors and infrastructure. This Special Issue will explore not only the hand, but the human body overall, with the aid of any kind of wireless sensors, including those that do not use batteries, or infrastructure-based interfaces. The joint optimization of the whole wireless network and the computation techniques needed to identify gestures will also be welcome. We also hope that this Special Issue inspires further exploration and development of innovative gestural interfaces in the industry 4.0 and IIoT era. Submissions focusing on passive sensors are particularly encouraged.

Potential topics include but are not limited to the following:

- Wearable sensors
- Passive sensors for gesture recognition
- Energy harvesting on passive remote control sensors
- Protocols and networks for wireless sensors communication
- Algorithms for gesture recognition
- Artificial intelligence applied to gesture recognition
- Sensing surfaces
- Gesture input fusion
- Cooperative robot control with gestures
- Industrial robots controlled by gestures
- Home automation using gestures
- Sign language recognition
- Gesture recognition and self-driving cars
- Manipulation of virtual environments using gestures
- User acceptance factors on gesture recognition solutions

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.hindawi.com/submit?specialIssue=582502.

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

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