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Preface

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1. This issue

This issue of JAISE is composed of four papers. The review process for the papers in this issue was supervised by our editors Boris De Ruyter, Achilles Kameas, Irene Mavrommati, George Roussos, Kevin Wang, and Michael Lew, whom we thank for their service.

Person identification is a process through which people are recognized when they enter an area using some information about their appearance or actions. This process is usually performed by asking the user to take some action such as showing a token card, entering a personalized PIN code, scanning a finger, or through video-based face analysis. The paper **"Identifying a person with door-mounted accelerometer"** by Gjoreski and Gams describes an approach for recognizing a person entering a room using the measured acceleration of the door as the user opens the door to enter the room. The method requires no additional action by the user, making it an unobtrusive approach. The acceleration signal in three dimensions is recorded and processed in time and frequency domains. Feature-based classification and signal similarity measures are used in time and frequency domains to identify the person entering the room.

Body sensors have been used in studies of human activity recognition for applications in gait analysis, gesture-based HCI, and monitoring activities of daily living. Methods that have been developed for processing the input data are often based on using a context window of time over which a recurrent neural network (RNN), a long short-term memory (LSTM) network, or methods based on dynamic time warping (DTW) are employed to recognize the activity using some form of temporal prediction. These methods tend to increase the accuracy of detection by modelling temporal dependencies between different actions, and hence often require significant processing load and incur a considerable amount of latency. The paper **"RapidHARe: A computationally inexpensive method for real-time human activity recognition from wearable sensors"** by Chereshnev and Kertesz-Farkas proposes a method for real-time human activity recognition based on modelling the distribution of the incoming raw data in a half-second context window using dynamic Bayesian networks. The user movement data is acquired by inertial body sensors, and the method has been developed to run in real-time on ordinary mobile devices.

There are two main approaches for human activity recognition through sensors. First is the data-driven approach, which aims to process the signals and classify them using machine learning techniques. While being effective in the recognition of primary movements, this approach in itself is not suitable for recognizing complex, high-level activities which require some background knowledge and additional reasoning. Knowledge-driven approaches that develop knowledge bases from human activities are more effective in high-level activity recognition. The paper **"A probabilistic data-driven method for human activity recognition"** by Foudeh et al. proposes a probabilistic, data-driven method for human low- and medium-level activity recognition and indoor tracking with time efficiency as an objective. The method is tested on the "Opportunity" dataset, which consists of daily activities in a sensor-rich environment, with both body sensor and environment sensor types. The main objective of this research is to suggest and apply methods suitable for batch processing of big data. The results of the analysis can be subsequently applied to a probabilistic reasoning function for high-level activity recognition.

Aquaculture is farming of aquatic organisms such as fish and seafood animals, as well as aquatic plants, under controlled conditions. The production yield of an aquaculture activity is greatly influenced by environmental factors such as water temperature, dissolved oxygen, presence of pollution agents in water, and the pH level. Some species are known to be highly sensitive to changes of these parameters in the water quality. Existing methods of using occasional water samples taken manually by farmers and analysed offline are inefficient due to the changes that occur during the transportation of the samples to the lab, and also as they often lead to a belated response to the condition due to the lengthy processes involved. One of the solutions is to monitor the water parameters in a reservoir for detection of any deviation in water quality. The paper **"Wireless sensor network for aquaculture: Review, survey, and case study of aquaculture practices in western Godavari region"** by Shareef and Reddy argues for the necessity of automated water quality monitoring systems to eliminate the need for manual water collection and achieve real-time evaluation of water parameters. The paper presents a review of the design of wireless sensor networks in aquaculture. It also discusses scenarios of aquaculture production in an area in the Indian province of Andhra Pradesh. The paper then proposes a wireless sensor network system design which enables remote monitoring of the aquaculture farms by sending alerts to the farmers when any deteriorating deviation in the water quality is detected.

2. Upcoming issues

The following is the list of upcoming issues of JAISE:

- November 2018: Regular Issue
- January 2019: The 10th Anniversary Issue
- March 2019: Regular Issue
- May 2019: Thematic Issue on a selected topic from Intelligent Environments'18
- July 2019: Regular Issue
- September 2019: Thematic Issue on "Wearable Computing Techniques for Smart Health"

More information on the call for papers for future thematic issues is available on the webpage of JAISE at: http://www.iospress.nl/journal/journal-of-ambient-intelligence-and-smart-environments/.