Internet of Things, Cyber-Physical Systems, and Machine Learning: Systems and Applications

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Aims & Scope:

Internet of Things (IoT) is related to the connection of physical objects to the Internet. These objects should be pervasive and ubiquitous by supporting reliable sensing capabilities. Moreover, these devices can be handled via unique addresses, support cooperation capabilities and provide ubiquitous applications. There is clear evidence of the increase of IoT systems and their adoption for several daily routine activities. People's homes are being invaded by IoT products for surveillance, environmental monitoring, energy consumption analysis and home automation.

A cyber-physical system is an integration of computing technologies which connect the cyber world to physical processes through communication technologies and is closely related to the IoT concept. Cyber-physical systems are built on top of embedded technologies and incorporate several sensors to monitor and control the physical environment. Moreover, the data collected are stored on remote servers to be processed and analyzed. The cyber-physical systems allow the creation of remote real-time monitoring solutions for enhanced living environments by providing efficient methods for data collection and transmission.

Regarding the healthcare field, IoT technologies provide effective and efficient methods for enhanced living environments and well-being. The IoT and systems will provide a relevant evolution of the healthcare field and will bring several social benefits. Furthermore, IoT and cyber-physical systems have been applied in multiple domain fields such as industry and smart cities. Numerous activities that, in the past, could only be done by specialized professions can be automated using IoT and cyber-physical systems.

The cyber-physical systems and IoT architectures can provide a continuous flow of data that can be used in multiple applications. However, in order to transform this data into knowledge, it is necessary to consider Machine Learning methods. The application of Machine Learning will significantly promote people's daily routine. Therefore, it is imperative to merge multiple technological fields such as cyber-physical systems and artificial intelligence to build novel architectures to solve complex public challenges and contribute to overall health and well-being.
Nevertheless, the development of these systems has design and implementation challenges such as human-computer interaction, information architecture, interoperability and accessibility. Furthermore, there are also security and privacy issues as the collected data are exceptionally sensible, and the confidentiality of that information must be ensured.

Combining IoT, cyber-physical systems, and Machine Learning domains turn possible to develop enhanced solutions with significant capabilities to support decision making. The proposed special session aims to present a comprehensive literature status on IoT, cyber-physical systems applications and related machine learning methods. Moreover, this special session will present an in-depth literature overview and aims to be of interest from multiple readers since scholars, researchers but also to industry.

Subtopics:

The interesting topics are described below, but not limited to:
- Cyber-Physical Systems
- Machine Learning
- Internet of things
- Cyber-Physical Systems for Indoor Quality Monitoring
- Connecting e-health and the Cyber-Physical Systems
- Machine Learning, Cloud and open-source platforms
- Mobile edge computing for Cyber-Physical systems and Internet of Things
- IoT Security and privacy challenges
- Novel IoT architectures.

Technical Programme Committee(s):

- Isabel de la Torre Díez, University of Valladolid, Spain
- Akash Kumar Bhoi, Sikkim Manipal University, India
- Joshua O. Ighalo, University of Ilorin, Ilorin, Nigeria
- Salome Oniani, Georgian Technical University, Georgia

Submission Procedure:

Researchers and practitioners are invited to submit papers through the below given easy chair link:
https://easychair.org/conferences/?conf=wcis2020

Select the special session track from the listed track. All submissions must be original and may not be under review by another publication. The submitted papers will be reviewed on a double-blind and peer review basis.

Publications:

The after-conference proceedingu of the CIS2020 will be published in Springer Book Series, 'Advances in Intelligent Systems and Computing'.

All inquiries should be directed to the attention of Session Chair/Co-Chair:

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