

# Call for Papers on ICCMIT 2017:

## “Internet of Things and Big Data ”

### Organized by:

Prof. Qing Tan<sup>1</sup>, Nashwa EI-Bendary<sup>2</sup>, Xiaokun Zhang<sup>1</sup>, Harris Wang<sup>1</sup>, Jose R. Villar<sup>3</sup>  
School of Computing and Information Systems, Athabasca University, Athabasca, Canada<sup>1</sup>  
Arab Academy for Science, Technology, and Maritime Transport, Cairo, Egypt<sup>2</sup>  
Computer Science Department, University of Oviedo, Oviedo, Spain<sup>3</sup>  
qingt@athabascau.ca<sup>1</sup>, nashwa.elbendary@aast.edu<sup>2</sup>, xiaokunz@athabascau.ca<sup>1</sup>,  
harrisw@athabascau.ca<sup>1</sup>, villarjose@uniovi.es<sup>3</sup>

### Objectives and Motivation

#### Overview

The availability of uniquely-addressable heterogeneous electronic (UAHE) –including sensors, actuators, smart devices, RFID tags, embedded computers, mobile devices, etc. is continuously growing day by day. From a networking perspective, the Internet of Things (IoT) relies on interconnected UAHE for creating a mesh of devices, producing information, and building a world-wide network of real physical objects. In this context, the IoT presents a technology that enables loosely coupled decentralized systems of cooperating smart objects of autonomous physical-digital devices, augmented with sensing/actuating, processing, and networking capabilities.

On the other hand, the coupling between the IoT and the Big Data has become an essential component for extracting value from collected data. Big Data is one of the most important recent research challenges with a paradigm relies on the collection of tremendous amount of data to support innovation in the upcoming decades. A dataset is considered as Big Data when it meets the four Vs requirements; namely, Volume, Variety, Velocity and Value. The keystone of Big Data exploitation is to leverage the existing datasets to create new information and predict future happenings, and to enrich the decision value chain. Accordingly, as the IoT continuously collects data about the surrounding living environments, it is considered as a prototypical example of Big Data and a great application area of Big Data Analytics.

Furthermore, Cyber-Physical Systems (CPS) is emerging from the integration of embedded computing devices, smart objects, people and physical environments, which is typically tied by a communication infrastructure. So, the design of CPS and the implementation of their applications need to rely on IoT-enabled architectures and protocols that, both locally and globally, enable collecting, managing and processing large data sets, and support complex processes to manage and control such systems. Thus, as a matter of fact, the large-scale nature of IoT-based CPS can be effectively and efficiently facilitated and supported via utilizing the Cloud Computing infrastructures and platforms for providing flexible and extensive computational power, resource virtualization and high-capacity storage for data streams in addition to ensuring safety, security and privacy.

#### Scope

The goal of this special issue is to highlight and address the advances and challenges as well as providing insights and solutions to open issues associated to the concepts of IoT, Big Data, and CPS with focusing on sensors and sensory systems. Contributions to this special issue are welcome to present novel methods, algorithms, protocols, architectures, platforms and applications. Suggested topics include, but are not limited to the following:

- ✓ Architecture design and development of smart systems
- ✓ Standards, protocols and methodologies for CPS and IoT
- ✓ Context-aware sensing and computing in IoT-based CPS
- ✓ Predictive maintenance in the IoT era
- ✓ CPS and wearable devices tracking
- ✓ Remote monitoring and interoperability in the IoT
- ✓ Big Data improvements in life quality and healthcare

- ✓ Intelligent platforms for collaborative test-beds
- ✓ Ambient intelligence, intelligent environments and intelligent platforms
- ✓ Open IoT platforms for modeling, simulation and testing
- ✓ Applied machine learning and computational intelligence
- ✓ Edge computing approaches for IoT-based CPS
- ✓ CPS and IoT applications on environmental monitoring, transportation, and healthcare
- ✓ CPS and decision support systems in the Industry 4.0.
- ✓ Telepresence robot as the IoT-based CPS
- ✓ Cloud Computing as infrastructure in supporting IoT, Big Data Analytics, and CPS

## **Important Dates**

All instructions and templates for submission can be found in the ICCMIT 2017 web site: <http://www.iccmit.net/>. Please, contact the special session organizers if you are planning to submit any paper.

We are pleased to announce that selected papers presented at the this special session of the ICCMIT2017 Conference will be invited to submit to special issues of Jurnal of Sensors.

<b>Paper submission Date</b>	<b>15 February, 2017</b>
<b>Acceptance Notification</b>	<b>28 February, 2017</b>
<b>Camera Ready</b>	<b>7 March, 2017</b>
<b>Conference Date</b>	<b>3-5 April, 2017</b>