Guest Editorial

The Use of Emerging Technologies on the Internet of Everything

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This Special Issue of iJIM aims to contribute with a diversified set of articles based on the works presented in the Experiment@ International Workshop 2016 "The Emerging Technologies on the Internet of Everything" – ETIoE'16 (http://expat.org.pt/other-events/workshop16/), held at University of the Azores (Ponta Delgada, Azores, Portugal).

In the era where the Internet of Things (IoT) has been experienced globally in different contexts, the Internet of Everything (IoE) can be seen as the next paradigm in the evolution of smart objects, in which the boundary between the physical object and digital information about the object is blurred [1].

The Internet of Everything is a concept that involves technologies, applications, processes, things, data and people in an interdisciplinary framework where emerging and interactive mobile technologies and applications can give a relevant contribute.

Given the current trends in technology – the significant increase of technology use and the reduced cost of processing power, storage, and bandwidth; the rapid growth of cloud, social media, and mobile computing; the capacity to analyze Big Data and turn it into useful information and knowledge that can create new competences, richer experiences, and unprecedented economic opportunities for businesses, individuals, and countries; and an improved ability to combine technologies (both hardware and software) in powerful ways – it is possible to reach a large percentage of physical objects connected and to achieve more value of connectedness [2].

Emerging technologies are being used in many different contexts and with several approaches for societal benefit. Therefore, they can give an important contribute to strengthening the use of IoE in different areas, from education to global economy, including industry, agriculture, livestock, fisheries and sea, medicine and research [3].

In this perspective, the Workshop "The Emerging Technologies on the Internet of Everything" – ETIoE'16 offered the opportunity to disseminate and share scientific works and projects on online experimentation and to develop collaborative work in emerging technologies on the context of the Internet of Everything (IoE), bringing together engineers and researchers from different areas.

ETIoE'16 offered a debating forum on the use of emergent technologies on IoE seeking, for example, to remote monitoring and data processing and analysis of to the discussion and evaluation of online resources for all, promoting the sharing perspective and the collaborative use of meaningful online experimental contents either in learning and training contexts or in real life environments.

As a result of the two-day discussion forum, this Special Issue comprise 11 articles in different topics on the use of emerging technologies on IoE.

These contributions can be divided into two main groups, one in subjects related to education and another with examples of applications in different areas.

The former includes articles that show the importance of sharing online experiments, including remote and virtual labs, as an excellent opportunity for networking of higher education institutions and for demonstrating their social impact and sustainability.

The latter group comprises works of research and development in different application areas as agriculture, environment, industry, automobile, manufacturing systems and cyber-physical systems. The background and overview of industry 4.0 concept are also the goal of one of those works.

References

[1] Ashton, K (2009). That "Internet of Things" Thing: In the Real World Things Matter More than Ideas. RFID Journal, http://www.rfidjournal.com/articles/view?4986.

[2] Selinger, M., Sepulveda, A., and Buchan, J. (2013). Education and the Internet of Everything - How Ubiquitous Connectedness Can Help Transform Pedagogy, CISCO Education IoE Whitepaper.

[3] ICC Commission on the Digital Economy (2016). ICC Policy Primer on The Internet of Everything, International Chamber of Commerce (ICC).