Lecturer:
Carlos Pedrinaci

Title:
Developing the Internet of Things: Opportunities and Challenges

Abstract:
The Internet of Things (IoT) is an extension to the current Internet that enables communicating and interacting with physical objects and devices. In the last years, the Internet of Things has witnessed an outstanding evolution in terms of hardware, e.g., Arduino, communication technologies, RFID, and even adoption, e.g., Fitbit, NEST thermostats, etc. Given the scale and pervasiveness of the IoT, it is expected that it will revolutionise the world paving the way for the creation of smarter transport infrastructures, for saving energy and even for sustaining healthier lives.

Despite the opportunities offered, the IoT still presents a large number of challenges ranging from technical aspects to societal concerns. The development, deployment, and maintenance of IoT applications requires understanding novel communication technologies, handling communication and hardware heterogeneity, creating scalable and resilient deployments, and combining all these technologies with cutting-edge big data technologies to process the data generated. In this talk we shall see how service orientation represents an adequate paradigm for this new environment. We shall see, however, that existing solutions need to be enhanced and extended to deal with the unprecedented scale and heterogeneity faced, including notably the need for integrating state of the art big data technologies capable of dealing with the overwhelming flow of data that such applications generate and need to deal with.

Short Bio:
Dr. Carlos Pedrinaci is a research fellow of the Knowledge Media Institute at The Open University since 2006. He holds an MSc in Computer Science and a PhD in Artificial Intelligence from the University of the Basque Country (Spain). His research interests include Web Science, Service Science, Semantic Web and Software Engineering. Over the years, Dr. Pedrinaci has been actively involved in the standardization of Semantic Web Services technologies notably as member of the W3C SAWSDL Working Group and the W3C USDL Incubator Group. Recently, his research has been centred on Web APIs and the Internet of Things. Dr. Pedrinaci has published over 80 papers in major conferences and international journals including ICWS, ISWC, ESWC and Web Science. He has co-organized a number of conferences, workshops, and summer schools including ESWC 2010 as Panel Chair, ESWC 2012 as Track Chair and WS-REST 2014.