Real-Time Reliable Internet of Things

*(Keynote Abstract)*

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**KEYNOTE ABSTRACT**

The massive urban availability in real-time, the ubiquitous connectivity, the introduction in a large scale of the Internet of Things (IoT), are ushering a new era of urban living. People take active roles in sensing, instrumenting and analyzing aspects of their lives online, creating virtual communities, changing their social and working habits. To build smarter, better connected, more livable communities we need to exploit the availability of massive urban data and leverage the stream of real-time massive data flows generated by the IoT applications. In this talk we will discuss recent advances and exciting opportunities in two key aspects, in utilizing the human crowd, and in monitoring and analyzing in real-time massive, heterogeneous, noisy and often unlabeled urban data streams. We will focus mainly and draw our motivation from the following important types of applications in the smartcity domain: (a) urban disaster and emergency response, and (b) transportation systems. Specifically I will present a number of research challenges and novel techniques that can facilitate the realization of real-time reliable IoT by bringing together the analysis of IoT data and exploiting the wisdom of the human crowd to achieve both high quality results and meet real-time constraints.

**SPEAKER’S BIOGRAPHY**

Vana Kalogeraki is an Associate Professor at Athens University of Economics and Business and the Director of the Computer Systems and Communications Laboratory. Previously she has held positions as an Associate and Assistant Professor at the Department of Computer Science at the University of California, Riverside and as a Research Scientist at Hewlett-Packard Labs in Palo Alto, CA. She received her PhD from the University of California, Santa Barbara in 2000. Prof. Vana Kalogeraki has been working in the field of distributed and real-time systems, peer-to-peer systems, crowdsourcing, mobility, resource management and fault-tolerance for over 20 years and has authored and co-authored over 180 papers in journals and conferences proceedings, including co-authoring the OMG CORBA Dynamic Scheduling Standard. She has served as the General co-Chair of SEUS 2009, the General co-Chair of WPDRTS 2006 and as a Program co-Chair of PiCom 2018, MDM 2017, DEBS 2016, MDM 2011, ISORC 2009, ISORC 2007, ICPS 2005, WPDRTS 2005 and DBISP2P 2003, a Tutorial Chair for ACM DEBS 2015, a Workshops Chair for IEEE SRDS 2015, a Demo Chair for IEEE MDM 2012, Area Chair (IEEE ICDCS 2016, 2012) and as program committee member for over 200 conferences. She was also awarded a Marie Curie Fellowship, three best paper awards at the 11th ACM International Conference on Distributed Event-Based Systems (DEBS 2017), the 24th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2009) and the 9th IEEE Annual International Symposium on Applications and the Internet (SAINT 2008), two Best Student Paper Award at the 2016 Pervasive Technologies Related to Assistive Living Environments (PETRA 2016) and the 11th IEEE/IPSJ International Symposium on Applications and the Internet (SAINT 2011), a UC Regents Fellowship Award, UC Academic Senate Research Awards and a research award from HP Labs. Her research has been supported by an ERC Starting Independent Researcher Grant, the European Union, joint EU/Greek "Aristeia" grant, a joint EU/Greek "Thalis" grant, NSF and gifts from SUN and Nokia.