

# **Seminar Announcement**

**Prof. Luca Carloni**

Columbia University, New York

## **Scalable Design of Heterogeneous System-on-Chip Platforms**

**Friday, May 22, 2015, 2:30 pm**

Dipartimento di Elettronica e Telecomunicazioni (DET)

Sala Conferenze – 5<sup>th</sup> floor, Cittadella Politecnica

Politecnico di Torino. Entrance: Corso Castelfidardo

### **Abstract**

Heterogeneous System-on-Chip (SoC) architectures are emerging as a fundamental computing platform for a variety of systems from mobile devices to data centers. Heterogeneity, however, increases design complexity in terms of hardware-software interactions, access to shared resources, and diminished regularity of the design. To address these challenges I present a scalable platform architecture for future classes of systems-on-chip and a companion system-level design methodology. The architecture is aimed at striking the right balance between regularity and specialization. The methodology is aimed at improving productivity of designers and programmers, by raising the level of abstraction for SoC design, promoting the use of high-level synthesis, and applying compositional design-space exploration for component reuse. I will conclude the talk with a brief presentation of a new graduate-level course that I have been developing at Columbia University based on these ideas.

### **Biography**

Luca Carloni is an Associate Professor of Computer Science at Columbia University in the City of New York. He holds a Laurea Degree Summa cum Laude in Electronics Engineering from the University of Bologna, Italy, and the M.S. and Ph.D. degrees in Electrical Engineering and Computer Sciences from the University of California, Berkeley. His research interests include methodologies and tools for multi-core system-on-chip platforms with emphasis on system-level design and intellectual property reuse, design and optimization of networks-on-chip, and distributed embedded systems. He coauthored over one hundred refereed papers and is the holder of two patents. Luca received the Faculty Early Career Development (CAREER) Award from the National Science Foundation in 2006, was selected as an Alfred P. Sloan Research Fellow in 2008, and received the ONR Young Investigator Award and the IEEE CEDA Early Career Award in 2010 and 2012, respectively. In 2013 Luca served as general chair of Embedded Systems Week (ESWeek), the premier event covering all aspects of embedded systems and software.

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