



CECS

CENTER FOR EMBEDDED & CYBER-PHYSICAL SYSTEMS

CECS Seminar Series

Presents

Design Technologies for Embedded Multiprocessor Systems-on-Chip

Professor at RWTH Aachen University, Germany

Abstract: The trend towards Multicore and even Manycore architectures affects virtually all areas of computing today. Especially in the mobiles and consumer domains, an extremely high architectural efficiency (MIPS/Watt) is required. In order to manage the complexity of multi-billion transistor IC designs with dozens of heterogeneous processing engines, advanced Electronic System Level (ESL) tools are required. ESL can be roughly subdivided into four categories: architecture modeling and optimization, application SW mapping, simulation and verification, and efficient IP block design. After a general introduction to embedded MPSoC (Multiprocessor Systems-on-Chip) architectures and ESL technologies, this seminar talk will cover selected aspects from the above four domains, in particular ESL power estimation, embedded multicore SW development, fast virtual platforms, and application-specific processor design.



Biography: Rainer Leupers received the M.Sc. (Dipl.-Inform.) and Ph.D. (Dr. rer. nat.) degrees in Computer Science with honors from the Technical University of Dortmund, Germany, in 1992 and 1997. From 1997-2001 he was the chief engineer at the Embedded Systems chair at TU Dortmund. In 2002, Dr. Leupers joined RWTH Aachen University as a professor for Software for Systems on Silicon. Since then, he has also been a visiting faculty member at the ALARI Institute in Lugano. His research and teaching activities comprise software development tools, processor architectures, and system-level electronic design automation, with focus on

application-specific multicore systems. He published numerous books and technical papers, and he served in committees of leading international conferences, including DAC, DATE, and ICCAD. He was a co-chair of the MPSoC Forum and SCOPES. Dr. Leupers received several scientific awards, including Best Paper Awards at DATE 2000, 2008 and DAC 2002, and he holds several patents on processor design automation technologies. He has been a co-founder of LISATek (now with Synopsys) and Silexica. He has served as consultant for various companies, as an expert for the European Commission, and in the management boards of compound research projects like UMIC, TETRACOM, HiPEAC, and ARTIST.

Thursday, April 9, 2015 – 11:00AM
Harut Barsamian Colloquia Room (EH 2430)

