Speaker 1: Jason Cong (UCLA)

Title: Era of Customization and Specialization

Abstract: In order to drastically improve the energy efficiency, we believe that future computer processors need to provide circuit-level and architecture-level support of customization and specialization so that the processor architecture can be adapted and optimized for different application domains. Customization can be made to computing cores, memory hierarchy, and network-on-chips for efficient adaptation for different workload. Also, we believe that future processor architectures will make extensive use of accelerators to further increase energy efficiency. Such architectures present many new challenges and opportunities circuit, architecture, and software co-optimization.

Bio: Jason Cong received his B.S. degree in computer science from Peking University in 1985, his M.S. and Ph. D. degrees in computer science from the University of Illinois at Urbana-Champaign in 1987 and 1990, respectively. Currently, he is a Chancellor’s Professor at the Computer Science Department of University of California, Los Angeles, the director of Center for Domain-Specific Computing (CDSC), and co-director of the VLSI CAD Laboratory. He served as the department chair from 2005 to 2008. Dr. Cong’s research interests include synthesis of VLSI circuits and systems, programmable systems, novel computer architectures, nano-systems, and highly scalable algorithms. He has over 300 publications in these areas, including six best paper awards. He was elected to an IEEE Fellow in 2000 and ACM Fellow in 2008. Dr. Cong is the recipient of the 2010 IEEE Circuits and System (CAS) Society Technical Achievement Award "For seminal contributions to electronic design automation, especially in FPGA synthesis, VLSI interconnect optimization, and physical design automation." Dr. Cong was a co-founder of Aplus Design Technologies (acquired by Magma in 2003) and AutoESL Design Technologies (acquired by Xilinx in 2011).