



TAU 2013

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[Ridge Tahoe Resort](#) (Lake Tahoe)

Stateline, Nevada, USA

***TAU/ISPD Keynote: Opportunities and Challenges for
High Performance Microprocessor Designs and Design Automation***

Dr. Ruchir Puri (Fellow, IBM)

12:00 – 1:30 pm, Wednesday, March 27, 2013

Abstract

With end of an era of classical technology scaling and exponential frequency increases, high end microprocessor designs and design automation methodologies are at an inflection point. With power and current demands reaching breaking points, and significant challenges in application software stack, we are also reaching diminishing returns from simply adding more cores. In design methodologies for high end microprocessors, although chip physical design efficiency has seen tremendous improvements, strong indications are emerging for maturing of those gains as well. In order to continue the cost-performance scaling in systems in light of these maturing trends, we must innovate up the design stack, moving focus from technology and physical design implementation to new IP and methodologies at logic, architecture, and at the boundary of hardware and software, solving key bottlenecks through application acceleration. This new era of innovation, which moves the focus up the design stack presents new challenges and opportunities to the design and design automation communities. This talk will motivate these trends and focus on challenges for high performance microprocessor design and design automation in the years to come.

Speaker Biography

Ruchir Puri is an IBM Fellow at Thomas J Watson Research Center, Yorktown Hts, NY where his efforts have focused on high performance design and methodology solutions for all of IBM's enterprise server and system chip designs. Most recently, he led the design methodology innovations for IBM's latest Power7 and zEnterprise microprocessors and is currently leading design methodology research efforts on future processors. Ruchir has received numerous IBM awards including the highest technical honor – IBM Fellow, which was awarded for his transformational role in microprocessor design methodology. In addition, he has received “Best of IBM” awards in both 2011 and 2012 and IBM Corporate Award from IBM's CEO, and several IBM Outstanding Technical Achievement awards.

Dr. Puri is a Fellow of the IEEE, a member of IBM Academy of Technology and IBM Master Inventor, an ACM Distinguished Speaker and IEEE Distinguished Lecturer. He is recipient of SRC outstanding mentor award and has been an adjunct professor at Dept. of Electrical Engineering, Columbia University, NY and was also honored with John Von-Neumann Chair at Institute of Discrete Mathematics at Bonn University, Germany.