Pramod Govindan

Principle Engineer

Rambus Chip Technologies

Tuesday, April 16, 2024

10:00 AM • MSEE 112

11:15 AM • MSEE 112

My Experience and Mission

Abstract: In this presentation, Dr. Pramod Govindan's experience is summarized along with some of his key accomplishments. He has 11 years of Industry experience and 14 years of Academic experience in the field of System-on-chip (SoC) design which span across USA and India. The industry experience discussed in this presentation includes SoC design activities for the network processor ASICs, Cryptographic accelerator, DDR5 memory controller & Clock driver ASICs. The academic experience discussed in this presentation includes Ultrasonic 3D data compression, Residue number system-based cryptography, and System Verilog based capstone project. This presentation also discusses Dr. Govindan's mission for the Professor of practice position, which includes activities such as Industry collaboration, involvement in System-on-Chip-Extension-Technologies (SoCET), Summer-Training-Awareness-and-Readiness-for-Semiconductors (STARS), and Purdue's collaboration with India Semiconductor Mission (IMS) etc.

Challenges in Architecting System-on-Chips

Abstract: This presentation discusses some of the challenges involved in architecting System on Chips. A brief introduction to SoC is provided in the beginning. Furthermore, a sample SoC architecture is discussed with some of the key modules and interfaces highlighted. The presentation discusses various topics such as Pad multiplexing, Multiple Clocks, Internal Buses, Memory Sub system, Mixed Signal, Debug Facilities, IP block integration, Low Power design, Verification phases etc. along with the challenges faced by the architects/designers when these are being incorporated in an SoC. The presentation utilizes analogies to explain some of the concepts.

Bio: Dr. Pramod Govindan received his Bachelor of Technology in electronics and communication engineering from Government Engineering College in India, a Master of Science in VLSI and microelectronics and a Doctor of Philosophy in electrical engineering from the Illinois Institute of Technology (IIT), Chicago. He had held technical/managerial positions at Analog Devices Inc. (ADI), California, and Rambus Chip technologies (India), and served as Assistant Professor at the University of North Florida (UNF), and Teaching Faculty at Oregon Institute of Technology (OIT) and University of Maryland (UMD). His research interest and effort primarily include reconfigurable hardware system-on-chip based digital system design and hardware realizations of Cryptographic algorithms on application specific integrated circuits (ASIC) and field programmable gate arrays (FPGA).

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