

## CENTRE FOR PRODUCT DESIGN AND MANUFACTURING

### INDIAN INSTITUTE OF SCIENCE

All are invited to the following **Talk** :

Title: Model-Based Performance Analysis for Electronic Design Automation

Speaker: Dr. **Balaji Raman**, Associate Professor at the Indian Institute of Information Technology (IIITS), Sri City, Andhra Pradesh

Date , Time and Venue : 29th November 2018, 2:00pm, MMCR, CPDM

Abstract:

First, I present the design complexity of Embedded Systems—an essential component of today's industry transformation including Smart Manufacturing. I motivate the use of probabilistic analytical models for performance analysis of such hardware systems (such that the design cost is optimized).

Second, I will present the stochastic model I developed to estimate an application parameter (the initial play-out delay) in the context of a System-on-Chip running a video decoding application. I will present the benefits of precisely estimating this initial play-out delay in terms of saving processor and memory resources.

Third, I will discuss the extensions of the analytical model for consumer electronics, and for Cyber-Physical Systems—such as automotive and microfluidic bio-chips. My current research efforts will lead to: (1) developing a software tool with analytical models as the base (for analysis); and (2) building hardware prototypes (for validation and synthesis).

Bio: **Balaji Raman** is an Associate Professor at the Indian Institute of Information Technology (IIITS), Sri City, Andhra Pradesh. **Balaji Raman** received his Masters (by research) degree and Ph.D. at the School of Computing, the National University of Singapore in 2003 and 2010 respectively.

**Balaji**'s primary research area is Embedded Systems. His paper published in the International Conference on Hardware/Software Co-Design and System Synthesis (CODES+ISSS) was among the top two papers nominated for the best paper award in 2006.

**Balaji** did two Postdocs in France: one in Ecole Polytechnique (near Paris); and the second at VERIMAG laboratory in Grenoble, France. He also worked as an R&D Engineer in Mentor Graphics in Grenoble, France.

For detailed bio, visit: <https://balajiraman.wordpress.com/bio/>

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Bio | Dr. **Balaji Raman**

[balajiraman.wordpress.com](https://balajiraman.wordpress.com)

**Balaji Raman** is an Associate Professor at the Indian Institute of Information Technology (IIITS), Sri City, Andhra Pradesh. **Balaji Raman** received his Masters (by research) degree and PhD at the School of Computing, National University of Singapore in 2003 and 2010 respectively. During his doctoral studies, he was a visiting scholar for six months at...

ALL ARE WELCOME

Chairman, CPDM