

Talk: Design Automation of Embedded and Cyber-Physical Systems

Who: Professor Prabhat Mishra

When: Sep 4th, 2019 at 4:00 pm

Where: Anfiteatro Prof. Paulo Ribeiro de Arruda, Engenharia Elétrica - EPUSP

Av. Prof. Luciano Gualberto, travessa 3, nº 158, Cidade Universitária Armando Salles de Oliveira, CEP 05508-010, São Paulo, SP

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Organization and Support:

IEEE Computer Society Chapter, South Brazil Section

Departamento de Engenharia de Computação e Sistemas Digitais, Escola Politécnica, Universidade de São Paulo

Abstract: Embedded systems are everywhere. They run the computing devices hidden inside a vast array of everyday products such as smartphones, smart gadgets, and smart home appliances. Cars are full of them, as are airplanes, satellites, and advanced military and medical instruments. Demand is skyrocketing for such systems to add new functions and smart features to a wide range of products. As applications grow increasingly complex, so do the complexities of these systems. Shrinking time-to-market coupled with short product lifetimes create a critical need for design automation of increasingly sophisticated and complex embedded systems and IoT (Internet of Things) devices. This talk will provide a broad overview on how to automate various design automation activities. Specifically, this talk will cover new research directions in automated modeling and analysis, design space exploration, HW/SW partitioning, dynamic reconfiguration, real-time scheduling, and application-specific optimizations for improving area, power, performance, energy, temperature as well as security of embedded and cyber-physical systems.



Biography:

Prabhat Mishra is a Professor in the Department of Computer and Information Science and Engineering at the University of Florida. He is a UF Preeminence Term Professor, the Research Director of the Nelms Institute for the Connected World, and a member of the Florida Institute of Cybersecurity. He received his Ph.D. in Computer Science and Engineering from the University of California, Irvine in 2004. His research interests include hardware security and trust, embedded and cyber-physical systems, energy-aware computing, formal verification, system-on-chip validation, and post-silicon debug. He has published 7 books, 25 book chapters, and more than 150 research articles in premier international journals and conferences. His research has been recognized by several awards including the NSF CAREER Award, IBM Faculty Award, ten best paper awards and nominations, and EDAA Outstanding Dissertation Award. Prof. Mishra currently serves as an Associate Editor of ACM Transactions on Design Automation of Electronic Systems, IEEE Transactions on VLSI Systems, and Journal of Electronic Testing. He is an ACM Distinguished Scientist and a Senior Member of IEEE, and served as an ACM Distinguished Speaker during 2016-2019.