Formal Verification of Cyber Physical Systems

....

Overview

Cyber-Physical Systems (CPS) are a new genre of software controlled physical systems, that are increasingly common in automotive, aerospace, and medical domains. Formal verification techniques are ways to reason in a mathematically precise way about the correctness of system models. This course is about state-of the art techniques for formal verification of Cyber-Physical Systems.

The course will focus on an important aspect of CPS, namely, the interaction between discrete and continuous elements that arise as a result of the interaction of software (discrete) with physical systems (continuous). We capture these behaviors in the framework of hybrid automata, and provide detailed coverage of the core algorithms and software tools that have been developed for the verification of these models.

Course participants will learn these topics through lectures and hands-on exercises and assignments.

Schedule and Venue	8-12 January 2018, at the Indian Institute of Science, Bangalore.
You Should Attend If...	▪ you are an engineer or researcher in the area of control systems or embedded systems design, verification, or testing of software/hardware, in automotive/aerospace industries. ▪ you are a student at any level (Bachelors, Masters, PhD) or faculty from reputed academic and technical institutions.
Fees	The participation fee for taking the course is as follows: **Participants from abroad: USD 500** **Participants from Industry: Rs 15,000** **Participants from Academia / Govt. Research Orgs: Rs 10,000** **Students: Rs 2,000** The above fee includes all instructional material, use of computing lab for tutorials and assignments, and working lunch on days of the course. A limited amount of accommodation on campus is available, and will be provided on request, subject to availability and payment of applicable charges.

The Faculty

Prof. Pavithra Prabhakar holds the Peggy and Gary Edwards Chair in Engineering at the Department of Computer Science, Kansas State University. She is well-known for her work on robust verification of Cyber-Physical Systems. Her research interests are in Cyber-Physical Systems and Formal Methods.

Prof. Deepak D'Souza is an Associate Professor at the Department of Computer Science and Automation, at the Indian Institute of Science, Bangalore. His research interests include Models and Logics for Real-Time Systems, Deductive Verification, and Program Analysis.

Course Coordinator

Prof. Deepak D'Souza
Phone: +91-80-22933142
E-mail: deepakd@iisc.ac.in

....

http://www.gian.iitkgp.ac.in/GREGN