

Ashutosh K. Gupta

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Education

PhD Computer Science, MPI for Software Systems, Saarbrücken, Germany(MPI-SWS)
Pursuing,
Research Field: Software verification (Invariant generation, Verification of Concurrent software)

MS Computer Science, Swiss Federal Institute of Technology, Lausanne, Switzerland(EPFL)
March 2007, CGPA: 5.56/6

B.Tech. Electrical Engineering, Indian Institute of Technology, Kanpur, India (IITK)
May 2004, CGPA: 8.2/10

Publications

Finding heap-bounds for hardware synthesis, FMCAD 2009,
with B. Cook, S. Magill, A. Rybalchenko, J. Simsa, S. Singh, and V. Vafeidais.

InvGen: An efficient invariant generator, CAV 2009,
with Andrey Rybalchenko.

From tests to Proofs, (*best paper award*) TACAS 2009,
with Rupak Majumdar and Andrey Rybalchenko.

Proving non-termination, POPL 2008,
with Tom Henzinger, Rupak Majumdar, Andrey Rybalchenko, and Ru-Gang Xu.

Academic Projects

Masters Thesis winter'06
Andrey Rybalchenko EPFL
Proving termination of program loops. In this project we improved a method to check termination/non-termination of program loops. We developed a tool called TnT to check termination of given loop.

Course Project: Computer Aided Verification Summer'06
Prof. Thomas A. Henzinger EPFL
A translator is developed between SCALA programs to ARMC (abstraction refinement model checker) to verify SCALA programs.

Semester Project Summer'06
Prof. Giovanni De Micheli EPFL
Manufacturing of DNA sensor chip, A DNA sensor chip was manufactured in 10um planner technology. Measurements done with these chips were used in results of the following paper:
Interface Layering Phenomena in Capacitance Detection of DNA with Biochips,
Sensors & Transducers Journal, 2007.

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Professional Experience

- Internship Oct'08–Dec'08 (3 months)
Microsoft Research Cambridge, UK
To develop a tool chain for automatic synthesis from C program to hardware circuits. My work was focused on finding bounds on memory consumption of the C program. We published a paper in FMCAD'09 based on this work.
- Design Engineer Jul'05–Sep'05 (3 months)
Whirlybird Electronics Kanpur, India
To Develop a network card for ARINC429 protocol and integrate it to the existing systems of Indian Navy. A driver was written on Real-time Linux system to control the card.
- Software Engineer Jun'04–Jun'05 (1 year)
ST Micro-electronics Noida, India
Software optimization of the MPEG4 and H263 video codec for ARM7/ARM9 processor.
Implementation and Integration of the Video Thread in Mobile telephone solution of ST.
Software optimization of the EVRC audio codec for ST2XX (VLIW) processor.
- Internship May'03–July'03 (3 months)
Quazar Technologies Delhi, India
To Design a Temperature controller for a Gas chromatograph with high stability of temperature which follows the given temperature profile.