Mihir P Mehta

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Education

Ph.D., Computer Science, University of Texas at Austin. (2014 - present)
GPA: 3.78/4 (Fall 2015)
B.Tech., Computer Science and Engineering, Indian Institute of Technology (IIT) Delhi. GPA: 7.9/10 (2009 - 2013)
Exchange semester, Ecole des Mines, Saint-Etienne. (2011)

Professional Experience

Research Intern at Intel Corporation, Austin, TX, USA. (2015)

- Built a Pintool to dynamically analyse executables. Augmented the analysis with fine-grained information obtained from static analysis techniques.

Software Engineer at Samsung Research Institute, Noida, India. (2013-2014)

- Optimised the Linux kernel for Samsung's Android devices.
- Improved core components of the Linux virtual memory subsystem.

Research Experience

Program verification in object-oriented languages with Professors Isil Dillig and Thomas Dillig, CS department, UT Austin. (2014-2015)

- Developed a prototype verifier based on Hoare logic and weakest pre-conditions.
- Used the Soot compiler framework to generate verification conditions and the Z3 theorem prover to discharge them.
- Generated example inputs demonstrating bugs in several test programs.

Algorithms for bisimilarity with Professor S Arun Kumar, CSE Department, IIT Delhi (2012-2013)

- Conceptualised and implemented a toolkit for verifying bisimilarity and other properties of timed automata and labelled transition systems.
- Improved an algorithm for generating a zone graph from a timed automaton.

Coursework (graduate courses)

UT Austin: Automated Logical Reasoning, Introduction to Mathematical Logic, Formal Verification and Semantics, Automatic Verification of Software, Numerical Linear Algebra, Automated Software Design.
IIT Delhi: Compiler Design, Theory of Computation, Numerical Optimisation.

Technical Skills

Programming languages: Functional languages (OCaml, SML, Common Lisp), logic programming languages (Prolog), hardware description languages (VHDL).
Theorem provers: ACL2, Z3
Operating systems: GNU/Linux (kernel and application development).
Compiler frameworks: Soot (Java), LLVM (C++).
Others: Xilinx, Matlab, PostgreSQL.

Scholastic Achievements

- Awarded the UT Austin Graduate School's Recruitment Fellowship. (2014-2017)
- All India Rank 138 (out of 400000), Joint Entrance Examination (IIT-JEE). (2009)
- Secured All India Rank 29 in the All India Engineering Entrance Examination (AIEEE) among 1000000 candidates. (2009)
- Scored 99 percentile in Verbal and Analytical Reasoning, GRE. (2012)

Others

Languages: English, French, Gujarati, Hindi.