

Mihir Mehta

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Web page (**with more details about projects**):

<http://airbornemihir.github.io/>

Academic Details

Year	Degree	Institute	CGPA/ Percentage
2009-2013	B Tech in Computer Science and Engineering	Indian Institute of Technology, Delhi	7.9 / 10
2009	Class XII, CBSE	Emmanuel Mission School, Kota	87.6%
2007	Class X, CBSE	Delhi Public School, Surat	93%

Scholastic Achievements

- Secured **All India Rank 138** in Joint Entrance Examination (IIT-JEE-09) among 400000 candidates.
- Secured **All India Rank 29** in All India Engineering Entrance Examination 2009 among 1 million candidates.
- Scored **99 percentile** in Verbal and Analytical Reasoning, GRE-2012.

Employment

Software Engineer

Samsung Research Institute, Noida.

July 2013-Present

- Currently working as a researcher in Samsung's Systems Core Group.
- Primarily tasked with optimizing the Linux kernel for the best performance on Samsung's Android devices.
- Made improvements of core components of the Linux virtual memory subsystem.

Major Projects

Algorithms for prebisimilarity

Undergraduate Thesis

Prof. S Arun Kumar

2012-Present

- Conceptualized and implemented a toolkit for verifying prebisimilarity and other properties of timed automata.
- Leveraged UPPAAL model checker to add support for difference bound matrices.
- Improved an algorithm for generating a zone graph from timed automata.
- Currently working on augmenting the toolkit with more general relations between timed automata.
- Tool paper expected in CAV 2014.

Intensional Programming in the Spreadsheet

Summer Project

Prof. Sanjiva Prasad

May 2011 - July 2011

- Built general programming language based on computations as spreadsheet rules.
- Modeled environment as spreadsheet program (written in Perl using the GTK+ 2.0 GUI toolkit)
- Implemented communication layer with arbitrary external environments (modeled as UNIX processes).
- Designed a game programming environment (written in OpenGL) as a proof of concept.

PintOS Development

Operating Systems

Course Project

January 2012 - April 2012

- Augmented PintOS subsystems with user-kernel privilege separation, virtual memory, and persistent file system support.
- Improved efficiency by allowing concurrent access to file system caches and virtual memory subsystems.

- Implemented and rigorously tested syscalls for privilege escalation via argument based vulnerabilities.

ML Interpreter

Programming Languages

Course Project

January 2011 - April 2011

- Developed scanner and parser for untyped, Turing-complete subset of the Standard ML language.
- Designed interpreter for this language using both eager evaluation (SECD machine) and lazy evaluation (Krivine machine) strategies.
- Tested and validated the interpreter using Church numeral arithmetic operations.

Technical Skills

- Proficient in imperative Languages (C, Python, Java) and functional languages (OCaml, SML). Experience with scripting languages (Perl, Python), database interaction languages (SQL) and declarative languages (Prolog).
- Familiar with frameworks for Compilers (LLVM), Graphics (OpenGL, GTK+), Hardware Emulation (Xilinx, VHDL) and Virtualization tools (QEMU, Bochs).
- Familiar with the internals of the Linux kernel (compilation, modules, memory management.)