

# Arvind Haran

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SUMMARY	<ul style="list-style-type: none"><li>• <b>Computer science graduate student</b> with a specialization in <b>Systems software development</b></li><li>• Strong background in <b>program analysis, software verification and algorithms</b></li><li>• Improved protocol latency of a foreign exchange trading system at Goldman Sachs</li></ul>
EDUCATION	<p><b>MS, Computer Science</b> <span style="float: right;"><b>Fall 2014</b></span> <b>Thesis:</b> Program analysis for Resilient and Approximate Computation University of Utah, Salt Lake City, UT <span style="float: right;"><b>GPA: 3.87 / 4.0</b></span></p> <p><b>MSc, Theoretical Computer Science</b> <span style="float: right;"><b>Spring 2012</b></span> <b>Thesis:</b> Games for Modal and Temporal Logics PSG College of Technology, India <span style="float: right;"><b>GPA: 8.86 / 10.0</b></span></p>
COMPUTER SKILLS	<p><b>Languages:</b> C C++ Python Java Perl SQL HTML XML <b>Software:</b> LLVM MATLAB Git Eclipse MySQL MPI <b>Operating Systems:</b> MS-DOS Linux</p>
RELATED EXPERIENCE	<p><b>Research Assistant</b> <span style="float: right;">January - May 2013 and August 2013 - present</span> <i>Software Analysis Research Lab, University of Utah</i></p> <ul style="list-style-type: none"><li>▪ Conceptualized and developed a symbolic relative program analysis technique for profiling application resilience in Boogie and Python.</li><li>▪ Designed and developed a C++/LLVM-based runtime fault injector <a href="https://github.com/soarlab/KULFI">https://github.com/soarlab/KULFI</a>.</li></ul> <p><b>Forex Trading and Sales Technology Intern</b> <span style="float: right;">May - August 2013</span> <i>Goldman Sachs, Salt Lake City, UT</i></p> <ul style="list-style-type: none"><li>▪ Designed and developed a protocol suite in Java for communication of quote objects between pricing engine and server.</li><li>▪ The proposed system shows almost twice speedup compared to the existing system that uses the FIX protocol (QuickFIX/J).</li></ul>
SELECTED PROJECTS	<ul style="list-style-type: none"><li>▪ Implemented parts of the kernel of the Xv6 operating system using C with inline assembly.</li><li>▪ Developed the core components of a single user database in C++, such as: B+ tree indexing, heap file manager, buffer manager and external sorting.</li><li>▪ Developed a Python to C compiler as part of the Compilers graduate course using Racket.</li><li>▪ Implemented a fast randomized greedy algorithm in Python that detects near-optimal community structures in large networks.</li><li>▪ Designed and implemented a desktop search application in Java. The B+ tree data structure was used for fast indexing and retrieval of data.</li></ul>
ADDITIONAL EXPERIENCE	<p><b>Teaching Assistant</b> <span style="float: right;">August - December 2012</span> <i>CS 3100: Models of Computation</i></p> <ul style="list-style-type: none"><li>▪ Helped teach seniors finite automata theory and basic python programming.</li><li>▪ Delivered select lectures, conducted office hours, designed and evaluated assignments.</li></ul>
SELECTED COURSEWORK	Advanced operating systems, database systems, advanced algorithms, compilers, computer architecture, data mining and formal methods in HPC.
PUBLICATION	Vishal Sharma, <b>Arvind Haran</b> , Zvonimir Rakamaric, and Ganesh Gopalakrishnan. "Towards formal approaches to system resilience." In IEEE 19th Pacific Rim International Symposium on Dependable Computing (PRDC), 2013, pp. 41-50. IEEE, 2013.