

MANASVI SAXENA

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EDUCATION

- M.S. (Thesis Program) Computer Science, University of Illinois – Urbana Champaign** May 2018
- **Coursework** - Formal Methods of Software Development, Logic in Computer Science, Computer and Cryptocurrency Security, Runtime Verification
- B.S. Computer Science, University of Illinois – Urbana Champaign** May 2015
- **Coursework** - Programming Languages and Compilers, Fundamental Algorithms, Computer Networking

EXPERIENCE

- Formal Systems Laboratory, University of Illinois** August 2016 - Current
Researcher Assistant Urbana, IL
- Implementing a Debugger for the K Semantics Framework. K is a rewrite based semantics framework in which programming languages can be defined using configurations, computations and rules.
 - The K Debugger is language independent - it's derived from the programming language's semantics in K. The K Debugger will be used to prove program correctness using the language's K semantics.
- Runtime Verification Inc., Urbana, Illinois** July 2015 - May 2016
Software Engineer Urbana, IL
- Part of team developing a dynamic analysis tool for finding undefined behavior in C programs, using C's formal semantics.
 - Worked on improving tool's performance, and evaluated its applications on large codebases.
- Coordinated Science Lab, University of Illinois** Summer 2014
Undergraduate Researcher Urbana, IL
- Worked on visualization of a large dataset containing records of faulty medical devices by the Food and Drug Administration (FDA).
 - Created an interactive web application that displays the visualizations using PHP/Javascript.
- Undergraduate Course Assistant, CS 125** Fall 2012
University of Illinois Urbana, IL
- Held office hours during which helped students with programs encountered in programming assignments.
 - Helped students understand concepts encountered in the course, such as recursion to students.

PROJECTS

- KEVM - EVM Semantics in K** github.com/kframework/evm-semantics
- Part of team working on formalizing the semantics of the Ethereum ecosystem in K. Our executable semantics is one of the most complete formalizations of the Ethereum ecosystem.
 - Semantics have been used to analyze real smart contracts on the Ethereum Blockchain.
- K Semantics Framework** github.com/kframework/k
- Core developer. In charge of developing debugging capabilities, and maintaining the rewrite engine.

RELEVANT PUBLICATIONS

- Everett Hildenbrandt, Manasvi Saxena, Xiaoran Zhu, Nishant Rodrigues, Philip Daian, Dwight Guth, and Grigore Rosu. KEVM: A complete semantics of the ethereum virtual machine. <http://hdl.handle.net/2142/97207>
- Dwight Guth, Chris Hathhorn, Manasvi Saxena, and Grigore Rosu. Rv-match: Practical semantics-based program analysis. In *Computer Aided Verification - 28th International Conference, CAV 2016, Toronto, ON, Canada, July 17-23, 2016, Proceedings, Part I*, volume 9779 of *LNCS*, pages 447–453. Springer, July 2016

TECHNICAL SKILLS

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|------------------------------|--|
| Programming Languages | Java, Scala, Python, C, OCaml, Dafny |
| Miscellaneous | Git, K, Z3, L ^A T _E X, IntelliJ IDEA |