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 Cyrptocurrency 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 Language Independent 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.
· Extending the Debugger's capabilities to allow it to function as a proof assistant for program verification in K.

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

Programming Languages	Java, Scala, Python, C, OCaml, Dafny
Miscellaneous	Git, K, Z3, LaTeX, Intellij IDEA