

Steve Zdancewic

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RESEARCH INTERESTS

My research interests encompass programming languages and security with the goal of providing techniques and tools for building safe, reliable, and secure systems.

EDUCATION

Ph.D. Computer Science expected May 2002
Minor Field: Mathematics
Advisor: Andrew C. Myers
Cornell University, Ithaca, NY.

M.S. Computer Science August 2000
Cornell University, Ithaca, NY.

B.S. Computer Science and Mathematics, with Honors May 1996
Carnegie Mellon University, Pittsburgh, PA.

AWARDS AND HONORS

Award Paper, ACM Symposium on Operating Systems Principles, 2001.
Intel Graduate Student Fellowship, 2001–2002.
Award Paper, Principles, Logics, and Implementations of High-level Prog. Languages, 1999.
Outstanding TA Awards, Cornell University Computer Science Dept., 1997 & 1999.
National Science Foundation Fellowship, 1996–1999.
Phi Beta Kappa and Phi Kappa Phi National Honor Societies, 1996.
Merck Fellowship, 1995–1996.

WORK & TEACHING EXPERIENCE

Cornell University, Ithaca, NY 1999–present
Research Assistant

I have collaborated with Professor Andrew Myers and a number of Cornell graduate and undergraduate students on the design and implementation of a programming language called Jif. Jif is an extension of Java that supports information-flow security policies, which express requirements on how confidential data is manipulated by software. The compiler verifies that Jif programs obey the policies and produces Java code as output, thus providing a practical way of

enforcing information security. The Jif compiler has been developed in the context of a larger research project called JItools, whose goal is to provide researchers with a framework for experimenting with Java-like languages. Jif has been publicly released and is available on the web at <http://www.cs.cornell.edu/jif>.

Lucent Technologies, Bell Labs, Murray Hill, NJ Summer 1999

Internship

I worked with Jon Riecke to develop a prototype information-flow analysis tool for determining whether C programs contain security leaks.

Cornell University, Ithaca, NY Fall 1997, 1999

Teaching Assistant

I have twice been a teaching assistant for Cornell's graduate level programming language course, once when it was taught by Greg Morrisett and once when it was taught by Andrew Myers. Each time I was closely involved with the creation and grading of homework assignments and exams.

Cornell University, Ithaca, NY Spring 1998

Instructor for "Transition to Java"

I designed and taught the first incarnation of a short (four week) course whose goal is to prepare sophomores for upper-level classes that use Java for the programming assignments. I was a full-fledged instructor for the class, which entailed preparing three one-hour lectures per week, designing the homework projects, and managing the course grading staff.

Imperative!, Pittsburgh, PA Summer 1996

Internship

I worked at a (now defunct) start-up company that provided web-hosting services for on-line retailers. I created an object-oriented abstraction layer over a standard SQL database that was used to store client inventory data.

Merck & Co., Rahway, NJ Summer 1995

Internship

I implemented a remote login client for Windows NT using DEC's Distributed Computing Environment.

SERVICE ACTIVITIES

I have reviewed papers for (among others):

Journal of Higher-Order and Symbolic Computation

Journal of Computer Security

ACM International Conference on Functional Programming Languages (ICFP)

ACM Principles of Programming Languages (POPL)

ACM Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA)

USENIX Operating Systems Design and Implementation (OSDI)

IEEE Symposium on Security & Privacy

I organized Cornell's Programming Language Discussion Group, a weekly forum on programming languages for students and faculty (<http://www.cs.cornell.edu/Projects/pldg>).

PUBLICATIONS

Refereed Conference and Journal Publications

- 1 Steve Zdancewic and Andrew C. Myers. Secure information flow via linear continuations. *Higher Order and Symbolic Computation*, 2001. To appear.
- 2 Steve Zdancewic, Lantian Zheng, Nathaniel Nystrom, and Andrew C. Myers. Untrusted hosts and confidentiality: Secure program partitioning. In *Proc. 18th ACM Symp. on Operating System Principles (SOSP)*, volume 35 of *Operating Systems Review*, pages 1–14. Banff, Canada, October 2001.
- 3 Steve Zdancewic and Andrew C. Myers. Robust declassification. In *Proceedings of 14th IEEE Computer Security Foundations Workshop*, pages 15–23, Cape Breton, Nova Scotia, Canada, June 2001.
- 4 Steve Zdancewic and Andrew C. Myers. Secure information flow and CPS. In *Proc. of the 10th European Symposium on Programming*, volume 2028 of *Lecture Notes in Computer Science*, pages 46–61, 2001.
- 5 Dan Grossman, Greg Morrisett, and Steve Zdancewic. Syntactic type abstraction. *Transactions on Programming Languages and Systems*, 22(6):1037–1080, November 2000.
- 6 Steve Zdancewic, Dan Grossman, and Greg Morrisett. Principals in programming languages: A syntactic proof technique. In *Proceedings of the 4th ACM SIGPLAN International Conference on Functional Programming*, Paris, France, September 1999.
- 7 Greg Morrisett, Karl Crary, Neal Glew, Dan Grossman, Richard Samuels, Frederick Smith, David Walker, Stephanie Weirich, and Steve Zdancewic. TALx86: A realistic typed assembly language. In *2nd ACM SIGPLAN Workshop on Compiler Support for System Software*, pages 25–35, 1999.

Unrefereed Publications

- 8 Steve Zdancewic, Lantian Zheng, Nathaniel Nystrom, and Andrew C. Myers. Secure program partitioning. Technical Report 2001–1846, Computer Science Dept., Cornell University, 2001.
- 9 Steve Zdancewic and Andrew C. Myers. Confidentiality and integrity with untrusted hosts. Technical Report 2000–1810, Computer Science Dept., Cornell University, 2000.
- 10 Steve Zdancewic and Dan Grossman. Principals in programming languages: Technical results. Technical Report TR99-1752, Cornell University, June 1999.

REFERENCES

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