

Aaron A. Tomb

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- Objective** To apply knowledge of programming language theory and program analysis toward practical methods of creating reliable, high-quality software.
- Education**
- University of California, Santa Cruz** Expected graduation date: June 2008
Ph.D. in Computer Science
- University of California, Santa Cruz** March 2006
M.S. in Computer Science
- University of California, Santa Cruz** June 2003
B.S. in Computer Science, Minor in Computer Engineering Graduated with Highest Honors
- Experience**
- NASA/Mission Critical Technologies** Research Intern
Ames Research Center, Moffett Field, CA Summer 2006
Developed a tool to perform symbolic execution of Java bytecode to detect possible unhandled runtime exceptions and automatically generate test cases to trigger potential bugs.
- Google** Summer of Code participant
The Mono Project Summer 2005
Developed an open-source automated defect detection tool for CIL bytecode, including a dataflow analysis framework. Later merged into Mono's Gendarme project.
- UCSC** Graduate Student Researcher
Advisor: Cormac Flanagan Summer 2004 – Present
Work has included a method for integrating type checking and type inference, and methods for performing practical type checking with expressive and undecidable type systems.
- UCSC: Kestrel Project** Undergraduate Researcher
Advisor: Richard Hughey Summer 2001, Summer 2003
Developed a network-aware run-time environment (using C on Linux) for the Kestrel massively-parallel processor board, including a PCI device driver and a debugging back-end.
- UCSC: Human Genome Project** Undergraduate Researcher
Advisor: David Haussler Summer 2000
System administrator for a cluster of 10 Linux machines. Wrote extensive Perl scripts to search, analyze, and manipulate gigabytes of flat file genome databases. Developed a C program to properly orient sequence fragment pairs.
- Ontrac Consulting** Programmer
San Ramon, CA Summer 1998 – Fall 1999
Created a log analysis module in C for their PaST2000 product, and a log database conversion utility in Visual Basic for their TranScan product. Began a port of PaST2000 from SCO OpenServer to Linux.
- Publications** Aaron Tomb and Cormac Flanagan. Automatic Type Inference via Partial Evaluation. In *Proceedings of the 7th ACM SIGPLAN Symposium on Principles and Practice of Declarative Programming*, July 2005.

Cormac Flanagan, Stephen N. Freund, and Aaron Tomb. Hybrid Types, Invariants, and Refinements for Imperative Objects. In *2006 International Workshop on Foundations and Developments of Object-Oriented Languages*, January 2006.

Jessica Gronski, Kenneth Knowles, Aaron Tomb, Stephen N. Freund, and Cormac Flanagan. SAGE: Practical Hybrid Type Checking for Expressive Types and Specification. In *2006 Workshop on Scheme and Functional Programming*, September 2006.

David Herman, Aaron Tomb, and Cormac Flanagan. Space-Efficient Gradual Typing. In *Trends in Functional Programming*, April 2007.