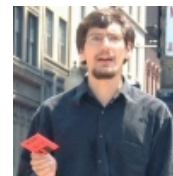


# C. Scott Ananian

*Programmer and organizer.*

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## Education

- 2000–2007 **Doctor of Philosophy**, *Massachusetts Institute of Technology*.  
Department of Electrical Engineering and Computer Science.  
Program Analysis and Compilation Group. Martin Rinard, advisor.
- 1997–2000 **Master of Science**, *Massachusetts Institute of Technology*.  
Department of Electrical Engineering and Computer Science.  
Thesis: *The Static Single Information Form*.
- 1993–1997 **Bachelor of Science and Engineering**, *Princeton University*.  
Department of Electrical Engineering. Concentration in Computer Engineering.  
Focus on operating systems and hardware design and implementation.  
Certificate from the Program in Theatre and Dance. GPA: 3.98.

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## Doctoral thesis

- title *Architectural and Compiler Support for Strongly Atomic Transactional Memory*
- committee Prof. Martin Rinard, Prof. Charles Leiserson, Dr. Bradley Kuszmaul
- description The design and implementation of three efficient transactional memory systems: an object-oriented software-only system, a scalable hardware system using a custom processor extension, and a hybrid of the two systems which combines the strengths of each. *See [cscott.net/Publications](http://cscott.net/Publications).*

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## Experience

- 2015–present **Town Meeting Member**, Brookline, MA.  
Introduced 19 warrant articles or motions as an elected representative for precinct 10 of Brookline, MA. Named to the Advisory Committee in 2021. Assisted on over a dozen articles or motions of others. Participated in work of state Energy Advisory Committee to develop EV-READY additions to MA building code; my language became law when MA adopted the 2018 IECC.
- 2013–present **Senior Features Engineer**, *Wikimedia Foundation*, San Francisco, CA.  
Led work to modernize the LanguageConverter infrastructure which translates Wikipedia articles between writing systems in 10 different languages. Drove effort to deploy real-time collaborative editing on the Wikimedia platform. Contributed to the foundation's next-generation wikitext/DOM parser and OOjs UI framework. *See [https://wikimediafoundation.org/wiki/User:CAnanian\\_\(WMF\)](https://wikimediafoundation.org/wiki/User:CAnanian_(WMF)).*
- 2011–2013 **Director, New Technologies**, *One Laptop per Child*, Cambridge, MA.  
Led exploration of next-generation software architecture and prototyped educational applications on a JavaScript/Firefox/Android stack. Participated in system design of XO-4 tablet and bring-up of XO-1.75 laptop with Chinese OEM. Software lead for Ethiopian literacy project, where we demonstrated acquisition of early literacy skills via unsupervised use of tablet computers. Implemented XO Stick, XOrdiuno, and XO-Bot, low-cost Arduino-based systems for electronics education. *See [cananian.livejournal.com/tag/olpc](http://cananian.livejournal.com/tag/olpc).*
- 2009–2011 **Senior Software/Hardware Architect**, *litl, LLC*, Boston, MA.  
Led hardware design for keyboard/trackpad RF remote for set top box project, including managing two Taiwanese/Chinese OEMs, creating and approving schematics and PCB layouts, managing the build process, and supervising the production line. Wrote all embedded firmware for the remote, including over-the-air update system and USB stack with HID, audio, and DFU functionality. Also implemented update system for the Linux-based litl OS, contributed to JavaScript runtime and bindings to native code, and python/Google App Engine server component. *See <http://www.fastcompany.com/1646754>.*

- 2007–2009 **Software engineer**, *One Laptop per Child*, Cambridge, MA.  
Improved the education of over 600,000 children as a Linux software generalist. Build manager for first OLPC production software release. Built database-backed manufacturing server to record every laptop on the production line and generate cryptographic material for security system, working with Chinese OEM. Created software update system based on new copy-on-write filesystem. Implemented theft-deterrent security system. Designed new filesystem and network architectures.
- 1997–2013 **Linux kernel hacker**, Cambridge/Brookline, MA.  
IPv6 RDNSS patches, fsnotify reviews. Implemented Unix98 pty support. Major early contributor to devfs (2.1.x kernels). Debugged/maintained port to 68k Macintosh machines (2.0.x and 2.2.x kernels). Extended power management (APM 1.2). Other bugfixes and improvements.
- 1997–present **Open source software author/maintainer**, Cambridge/Brookline, MA.  
Over 140 repositories on github, 27 packages on npm. Maintain the `domino` DOM implementation for Node which is downloaded over 27,000 times per month. *Much more at [github.com/cscott](https://github.com/cscott).*
- 2004–2005 **Lead programmer**, *Verified Voting Foundation*, Cambridge, MA and San Francisco, CA.  
Design and implementation of the *Election Incident Reporting System*, which collected over 43,000 incident reports during the 2004 and 2005 US elections. *See [voteprotect.org](http://voteprotect.org).*
- 1998–2007 **Primary author, FLEX Java compiler and runtime**, MIT, Cambridge, MA.  
Wrote the FLEX static whole-program compiler for Java and its runtime system. Authored the vast majority of its over 290,000 lines of Java and C code. Coordinated contributions from 21 researchers, who collectively used FLEX to produce 25 published papers. *See [flex.cscott.net/Harpoon](http://flex.cscott.net/Harpoon).*

## Selected publications

- Growing Up with Nell: A Narrative Interface for Literacy.** C. Scott Ananian, Chris J. Ball, and Michael Stone. *The 11th International Conference on Interaction Design and Children (IDC 2012)*, Bremen, Germany, June 2012.
- Unbounded Transactional Memory.** C. Scott Ananian, Krste Asanović, Bradley C. Kuszmaul, Charles E. Leiserson, and Sean Lie. *IEEE Micro Special Issue: Top Picks from Computer Architecture Conferences*, January/February 2006.
- Efficient Object-Based Software Transactions.** C. Scott Ananian and Martin Rinard. In *Synchronization and Concurrency in Object-Oriented Languages (SCOOL)*, San Diego, CA, October 2005.
- Direct Addressed Caches for Reduced Power Consumption.** Emmett Witchel, Sam Larsen, C. Scott Ananian, and Krste Asanović. In *Proceedings of the 34th Annual ACM/IEEE International Symposium on Microarchitecture (MICRO-34)*, Austin, Texas, December 2001.
- Criminal Code?** C. Scott Ananian. *Salon* magazine, February 9, 2000.

## Awards

- top pick *Unbounded Transactional Memory* included in *IEEE Micro*'s 2005 "Top Picks from Computer Architecture Conferences" issue.
- honor societies Member of Phi Beta Kappa, Tau Beta Pi, and Sigma Xi. "Outstanding Academic Achievement" from Princeton School of Engineering.

## Projects and interests

- transactions Designed and implemented software, hardware, and hybrid transactional memory systems.
- embedded Built embedded systems including set top box remote for litl, XOrduino/XO Stick for OLPC, PiXoR modem encryption device, Chirp/Cheap DMX dongles, MicroMouse robot, laser text projector, and a StrongARM mobile vision platform.
- activism Lobbied Congress for voter-verifiable election systems, organized rallies in protest of the DMCA, and had a small part in exposing illegal election practices by Diebold.
- kipu Participant in the MIT Khipu Research Group, which is attempting computer-aided analysis of ancient South American knotted-cord artifacts. Digitized khipu in a German collection.