

Geoffrey Thomas

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- EDUCATION** **Massachusetts Institute of Technology** *2006 – 2011*
S.B. and coursework for M.Eng. in Computer Science and Engineering. Graduate-level classes include operating systems, distributed filesystems, and computer and network security.
- EXPERIENCE** **Hudson River Trading: Systems Engineer** *2015 – 2017*
- Developed and maintained technical infrastructure for a global high-frequency trading firm, writing low-level C++ and Python software for Linux (Debian) and FreeBSD.
 - Reworked internal deployment process for compilers and libraries, enabling a much simpler and safer upgrade process and allowing several important upgrades to happen smoothly.
 - Built a security layer based on Linux containers to sandbox a regulatory-compliance webapp.
 - Wrote an analysis toolkit based on Linux *perf_events* for on-call staff to diagnose live issues.
 - Drove several internal changes to increase automation and reliability, including increased use of Debian packaging, systemd, and configuration management (CFEngine).
 - Contributed to open-source projects and wrote the company's open-source policy.
 - Debugged issues with commercial NFS filers, leading to multiple vendor bug reports, and provided workarounds and monitoring.
 - Took lead on transition from IRC to Slack, including identifying several shortcomings in their archival product and writing custom archiving software to comply with FINRA requirements.
 - Provided deep technical assistance on many different topics, including porting kernel drivers and analyzing performance problems.
- Moka5, Inc.: Principal Engineer, Office of the CTO** *2012 – 2015*
- Lead developer of Moka5 BareMetal, a commercial derivative of Ubuntu Linux designed for Windows virtualization. Responsible for driver debugging, OS upgrades, build infrastructure, and security response.
 - Worked with customers to understand and debug production issues, replicate them locally, and provide both immediate and long-term fixes.
 - Contributed features to upstream open-source projects including NetworkManager, D-Bus, and sbuild, and led maintenance for config-package-dev.
 - Supervised college interns, mentored new hires, and presented at industry conferences.
- MIT Electrical Engineering and Computer Science** *January 2014*
- Organized a group of alumni to teach an accelerated (“caffeinated”) version of 6.828 Operating System Engineering during the January inter-semester period, helping about 30 students to implement an operating system over the course of one month. Responsible for all aspects of class, including lectures, course software, grading, and office hours.
- MIT Electrical Engineering and Computer Science: M.Eng. Student** *2010 – 2011*
- Graduate teaching assistant for 6.046 Design and Analysis of Algorithms, 6.857 Network and Computer Security, and 6.858 Computer Systems Security.
 - Designed and implemented vulnerable systems for students to attack in homework assignments, including SSL servers, Python sandboxes, and encryption algorithms.

MIT Student Information Processing Board

2006 – 2011

Member of MIT's volunteer student computing group.

- Co-maintained and served as project architect for `scripts.mit.edu`, MIT's student-run dynamic web hosting service, with eight servers and three thousand hosting accounts (students, faculty, staff, and organizations) as of 2011. Responsible for system administration, design, development, training of new team members, support, and security response.
- Co-maintained the Debathena project, a student-developed implementation of MIT's Athena system for Debian and Ubuntu that has been popular on personal computers. Collaborated with MIT IS&T on Debathena being adopted as the official Athena client distribution for hundreds of workstations campuswide.
- Taught January-term classes to MIT students and staff on C, git, gdb, and other topics.
- In 2010, SIPB won the Karl Taylor Compton Prize, MIT's highest award for students.

VMware, Inc.: intern

June – August 2010

- Prototyped predictive dynamic resource allocation using performance counters.

Ksplice, Inc. (now Oracle): intern

June – August 2009

- Developed kernel build infrastructure and GUI for an early-stage startup.

Akamai Technologies: intern

June – August 2008

- Designed and implemented a framework for kernel-level rootkit detection.

MIT CSAIL: undergraduate researcher

May – December 2007

- Implemented multiple device drivers for Linux for a new smartphone.

SKILLS

- Experienced in C, Python, C++, Rust, bash, x86 assembly, and many other languages.
- Adept in development and administration of Linux/UNIX-based environments (particularly Ubuntu, Debian, and Fedora, as well as Mac OS X) on both server and desktop environments.
- Contributor to many free software/open-source projects, including Debian (as a Debian Maintainer) and the Rust standard library.

PUBLICATIONS

J. Arnold, T. Abbott, W. Daher, G. Price, N. Elhage, G. Thomas, and A. Kaseorg. "Security Impact Ratings Considered Harmful." 12th USENIX Workshop on Hot Topics in Operating Systems. May 2009. <https://arxiv.org/abs/0904.4058>