

Jason Gross

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RESEARCH INTERESTS

Programming Languages, Formal Verification, Cryptography, Performance of Automation in Interactive Proof Assistants, Homotopy Type Theory, Category Theory, Program Synthesis

EDUCATION

Massachusetts Institute of Technology 2013–2021
PhD in Computer Science Cambridge, MA
Advisor: Adam Chlipala
Thesis: Performance Engineering of Proof-Based Software Systems at Scale
SM Thesis: An Extensible Framework for Synthesizing Efficient, Verified Parsers

Massachusetts Institute of Technology 2009–2013
BS in Mathematics and Physics Cambridge, MA
GPA: 4.6/5
Relevant Coursework: Security, Program Analysis, Performance Engineering of Software, Statistical Physics, Quantum, Topology, Analysis, Waves & Vibrations, Special Relativity, Algebra

EXPERIENCE

INTERNSHIPS

Google June 2018–August 2018
Software Engineering Intern Cambridge, MA
• Worked with BoringSSL on integration of proven-correct low-level ECC primitives into Chrome

MIT September 2015–December 2015
TA for 6.172 (Performance Engineering) Cambridge, MA
• Created and led recitations, taught students, and helped run class
• Analyzed and explained assembly output of `gcc -O3` to teach vectorization

Microsoft Research June 2014–August 2014
Intern Cambridge, United Kingdom
• Collaboratively created a language for specifying input/output behavior of x86 assembly programs; Verified the I/O behavior of a number of simple programs

COMPUTER SKILLS

- Proficient: Coq, Mathematica, git, Python, JavaScript, BASIC
- Working knowledge: C, C++, Agda, OCaml, Haskell, Scheme, HTML, CSS, Perl, Java
- Basic knowledge: Matlab, Lean, Idris, Ruby, Go, Ur/Web, x86 Assembly

TEACHING

- Instructor at Monsoon Math Camp: category theory, linear logic, Löb's theorem

- TA for 6.172 (Performance Engineering): Led recitations, analyzed and explained assembly output of `gcc -O3` to teach vectorization
- TA for 8.012 (Physics I) and 8.022 (Physics II) in Experimental Study Group
- Teacher at MIT ESP Programs: L^AT_EX, philosophy, linear algebra, quantum mechanics

OTHER ACTIVITIES

- Co-maintainer of the Fiat Cryptography project (`mit-plv/fiat-crypto` on GitHub)
- Co-maintainer of the homotopy type theory Coq repository (`HoTT/HoTT` on GitHub)
- Program Committee Member of CoqPL 2022
- Committer to the SIPB BarnOwl project (<https://barnowl.mit.edu>)
- Canada/USA Mathcamp (Summers 2006–2009)