

# 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<sup>A</sup>T<sub>E</sub>X, 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)