

# Jason Gross

jgross@mit.edu — (631) 790-8962

## PRESENT ADDRESS

258 Prospect Street, Apt 1L  
Cambridge, MA 02139

## PERMANENT ADDRESS

126 Hayrick Lane  
Commack, NY 11725

## EDUCATION

**Massachusetts Institute of Technology**, Cambridge, MA

Began Doctorate of Philosophy in Computer Science in September 2013

Research Interests: Homotopy Type Theory, Category Theory, Program Synthesis, Type Theory

Bachelor of Science, June 2013

Major in Mathematics and Physics

Undergraduate G.P.A. 4.6/5.0

### Coursework:

- Computer Science: Foundations of Program Analysis (current), Performance Engineering of Software Systems, Structure and Interpretation of Computer Programs
- Physics: Statistical Physics I & II, Quantum Physics I, II, & III, Classical Mechanics II, Waves and Vibrations, Special Relativity and the Physics of Spacetime
- Mathematics: Paradox and Infinity, Category Theory for Scientists, Algebraic Topology I, Seminar in Topology, Introduction to Topology, Real Analysis, Abstract Algebra I & II, Differential Equations, Calculus I & II, Linear Algebra
- Other Sciences: Introductory Biology, Introductory Chemistry, Design a Concentrated Solar Power Water Heater (seminar)
- Other: The Art and Science of Happiness, Metaphysics, Introduction to Musical Composition, Capitalism and Its Critics, Moral Psychology, Philosophy of Quantum Mechanics, Moral Problems and the Good Life, Philosophy of Love

## EXPERIENCE

### MIT

April 2012–Present

*Researcher*

Cambridge, MA

- Entered a significant amount of category theory into the automated proof assistant Coq (<https://github.com/JasonGross/HoTT-categories>)
- Worked on building an interface for databases and database migration on top of category theory in Coq with David Spivak and Adam Chlipala

### MIT CSAIL

November 2009–September 2011

*Researcher*

Cambridge, MA

- Designed from scratch a data collection webpage, collected data for, and helped with research on categorical and transfer learning (<http://jgross.scripts.mit.edu/alphabets/>).
- Co-author of “One shot learning of simple visual concepts” published in *Proceedings of the 33rd Annual Meeting of the Cognitive Science Society*.

### MIT

Fall 2009–Present

*Teacher*

Cambridge, MA

- Taught classes on  $\text{\LaTeX}$ , philosophy, linear algebra, and quantum mechanics for MIT Educational Studies Program’s Splash, Spark, and Summer HSSP (High School Studies Program)
- Teaching Assistant for 8.012 (Physics I) and 8.022 (Physics II) in Experimental Study Group

### MIT OCW

May–August 2010

Cambridge, MA

- Evaluated and categorized videos of Walter Lewin solving physics problems for updating the

8.01 (Physics I) OpenCourseWare (OCW) website.

**Commack High School**

Fall 2006–Summer 2009

*Independent Researcher*

Commack, NY

- Independently researched circuits over sets of natural numbers for three years.
- Won fourth place award in mathematics in ISEF (Intel International Science and Engineering Fair) in 2009, third place award in ISEF 2008.

**Turnpike Total Appliance**

Fall 2006–Summer 2009

*Web Page Designer*

Commack, NY

- Designed and improved main company website, took initiative to make more improvements.

**COMPUTER SKILLS**

- Proficient skills – BASIC, Python, Java, JavaScript, Mathematica, T<sub>E</sub>X macro language, Coq
- Working knowledge – Agda, C, C++, Scheme, Haskell, Matlab, HTML, CSS, git, L<sup>A</sup>T<sub>E</sub>X
- Basic knowledge – OCaml, Ur/Web

**HONORS AND AWARDS**

- Mathematics Honor Society (Commack High School)
- Collection of 12 original K'NEX synagogue models exhibited in various museums (2004–2008)
- Graduated Cum Laude from Commack High School (June 2009)

**EXTRACURRICULAR ACTIVITIES**

- Canada/USA Mathcamp (Summers 2006–2009)
- HMMT Solutions Editor (2010)
- SIPB (Student Information and Processing Board) Member
- Project leader for MITeX (<http://mitex.mit.edu/>), an online interface for composing L<sup>A</sup>T<sub>E</sub>X
- Committer to the SIPB BarnOwl project (<http://barnowl.mit.edu>)
- Co-maintainer of the homotopy type theory Coq repository (HoTT/HoTT on github)

**INTERESTS**

- Philosophy
- Programming
- Dancing, especially contra-, square-, and tango dancing
- Psychology
- Hiking
- MIT Mystery Hunt, Participated on Manic Sages Team, January 2008–2012