

Experience

Software Engineer, Airbnb *February 2015 – Present*

- Defined Airbnb's long-term continuous integration (CI) vision and currently lead the development of its container-based CI infrastructure—ask me about it!
- Drove the mass deprecation of the previous CI system across 430 repositories
- Designed and built a automated pipeline to track test reliability, contact stakeholders, and ultimately disable flaky tests. My work drove the build failure rate down from 30% down to < 1%.

Software Engineering Intern, Dropbox *Summers 2012 and 2013*

- Prototyped an enterprise product that became *Dropbox Business*
- Revamped the photo thumbnailing infrastructure to optimize compute cost and improve image metadata handling

Teaching Assistant *Fall 2013*

MIT 6.042 Mathematics for Computer Science

- Developed the curriculum and graded student work
- Led recitation section and held weekly office hours

Teaching Assistant, MIT 6.170 Software Studio *Fall 2012*

- Developed the curriculum, prototyped projects, and graded student work
- Led recitation section and held weekly office hours

Research Assistant *2011 – 2012*

The Julia Project, MIT CSAIL

- Implemented a web-based read-eval-print loop (REPL) and data visualization functionality

Software Engineering Intern, Panjiva *Summer 2011*

- Developed and shipped a modular user portal composed of interactive dashboard widgets
- Developed a rigorous release process to improve site stability

Education

Massachusetts Institute of Technology

M.Eng. Electrical Engineering and Computer Science, February 2016

B.Sc. Electrical Engineering and Computer Science, June 2013

Selected coursework – Artificial Intelligence, Machine Learning, Program Analysis, Parallel Computing, Probabilistic Systems Analysis, Software Construction, Computation Structures, Algorithms, Discrete Mathematics, Computer Systems Engineering, Theory of Computation, Computer Graphics, Cryptography and Cryptanalysis, Advanced Data Structures

Skills

Knowledgeable about: continuous integration, containerization, developer tooling, distributed systems, programming language theory, functional programming, type systems, formal verification

Other skills: conference speaking, technical mentorship, user interface design

Languages: C, C++, CSS, Coq, HTML, Haskell, Java, JavaScript, Python, Rust, SQL, Ruby

Selected personal projects

A formally verified original soundness proof for the Girard-Reynolds polymorphic lambda calculus

Other machine-checked proofs: the Kleene fixed-point theorem, the soundness of the simply typed lambda calculus, and a category theory formalization

An implementation of the HMF type inference algorithm for higher-rank types

Hashpass: a stateless password manager

Netflix Party: Chrome extension for group Netflix viewing events (160,000 weekly active users)

Real-time 3-D raytracer in JavaScript

Awards and recognitions

1st Place, MIT's Web Programming Competition (6.470)

CoolComply, a solar powered refrigeration device for storing and monitoring MDR-tuberculosis medication, won the \$100,000 Harvard Catalyst Pilot Grant

Personal projects featured in high-profile media outlets including *TechCrunch*, *Mashable*, *Engadget*, *TIME*, *The Discovery Channel*, *The Boston Globe*, *The Huffington Post*, et. al.