

## Work Experience

### October 2012 - present, Google

Software engineer for Google Maps. I work on the machine learning team responsible for clustering local businesses with data from disparate sources.

### August 2010 - October 2012, Jane Street Capital

Quantitative research and technology group. I worked on a distributed real-time order marking system.

### Summer 2009, National Science Foundation

Taught courses on functional programming and theorem proving, Hanoi, Vietnam.

### Summer 2007, Microsoft/INRIA

I worked on the formalization of Galois Theory in the Coq proof assistant.

### Summer 2004, Intel

I worked on theorem-prover-based static analysis in the internal reFLect programming language, used by Intel to verify hardware designs.

### Summer 2002, IBM

I wrote a compiler for an XML-based database query language.

### June 2001 - July 2002, Eventmonitor, Inc.

Java programmer at a financial software startup.

## Selected Publications

### The Dodecahedral Conjecture

Solves a problem in discrete geometry originally posed in 1943.  
Journal of the American Mathematical Society, 2010

### Efficient Intuitionistic Theorem Proving with the Polarized Inverse Method

Conference on Automated Deduction, 2009

### Imogen: Focusing the Polarized Inverse Method for Intuitionistic Propositional Logic

Logic for Programming, Artificial Intelligence and Reasoning, 2008

### An interpretation of Isabelle/HOL in HOL Light

International Joint Conference on Automated Reasoning, 2006

### A Proof Producing Decision Procedure for Real Arithmetic

Conference on Automated Deduction, 2005

## Open Source Projects

### omake-mode

An Emacs interface to the OCaml compiler (<https://github.com/seanmcl/omake-mode>)

### Imogen

A theorem prover for intuitionistic logics (<https://github.com/seanmcl/imogen>)

## Education

### 2004 - present, Carnegie Mellon University

Ph.D. in Computer Science

### 2002-2004 - New York University

Masters in Computer Science

## 1995-2000 - University of Michigan

Bachelor of Science, Mathematics

Bachelor of Musical Arts, Clarinet performance

## 1994-1995 - Interlochen Arts Academy

## Awards

2000 - AMS, MAA, SIAM Morgan Prize for Outstanding Mathematics Research

## Teaching experience

### Carnegie Mellon University

Teaching Assistant in functional programming and constructive logic.

### Courant Institute, New York University

Teaching Assistant in algorithms, programming languages, and artificial intelligence.

## Languages

### Used daily

C++, Python, Bash, Emacs Lisp

### Used regularly

OCaml, Standard ML, Haskell

### Passing knowledge

Javascript, HTML, CSS, Prolog