

Education

Northeastern University. Boston, MA May 2020 (Expected)

College of Computer and Information Science

Candidate for Bachelor of Science in Computer Science

Relevant Classes: *graduate:* Types, Contracts, Gradual Typing, and Compiler Correctness, Algorithms, Static Analysis of Software *undergraduate:* Compilers, Computer-Aided Reasoning, Software Development, Networks and Distributed Systems, Object-Oriented Design, Advanced Technical Writing, Computer Systems, Group Theory, Real Analysis, Theory of Computation

GPA/Honors: 3.8/4.0, Honors Program, Dean's List (Fall 2015, Spring 2016, Fall 2016, Fall 2017, Fall 2018)

Oregon Programming Languages Summer School. Eugene, OR July 2017

An intensive two-week lecture series on foundational concepts and research in programming languages

Sage Hill School. Newport Beach, CA May 2015

Relevant Classes: Advanced Topics in Mathematics, Calculus III, AP Physics C, Engineering

Experience

Northeastern University. Boston, MA.

Research Assistant (Full-Time) Summer 2016, January - July 2017, January - June 2019

Coauthored work on parametric polymorphism and gradual typing, including developing proofs of parametricity for gradually typed languages. Reworked and simplified a compositional compiler and proofs of its correctness.

Teaching Assistant, Logic and Computation January - April 2019

Led students' lab sections reviewing course material and supervised other teaching assistants.

Teaching Assistant, Programming Languages September - December 2018

Held office hours, graded homework assignments and exams, and proctored exams.

Tutor, Logic and Computation September 2016 - June 2017, September - December 2017

Led students' lab sections reviewing course material and supervised other teaching assistants. Created homework assignments and proofread the instructor's assignments.

The Charles Stark Draper Laboratory, Inc. Cambridge, MA.

Formal Methods Developer January - July 2018

Implemented a value-set static analysis for binaries (https://github.com/draperlaboratory/cbat_tools).

Proved a disassembly target language type-safe in the Coq theorem-prover.

Promenade Software. Irvine, CA.

Software Development Intern July - August 2014, July - August 2016

Implemented a Python scripting system within a web interface for medical devices in the Parlay software package (<https://promenadesoftware.com/parlaytm>).

Papers

1. Chris Casinghino, Michael Dixon, Jt Paasch, Cody Roux, John Altidor and Dustin Jamner.
Using Binary Analysis Frameworks: The Case for BAP and angr.
To appear in *11th Annual NASA Formal Methods Symposium (NFM 2019)*. Houston, Texas, USA. May 2019.
2. Amal Ahmed, Dustin Jamner, Jeremy Siek, and Philip Wadler.
Theorems for Free for Free: Parametricity With and Without Types.
In *22nd ACM SIGPLAN International Conference on Functional Programming (ICFP '17)*, Oxford, UK, September 2017.

Awards

Provost's Advanced Research/Creative Endeavor Award

Northeastern University, May 2016

Abstracting Gradual Polymorphism – \$2100

Summer Scholars Independent Research Fellowship

Northeastern University, July - August 2019

Extension-Proof Compiler Verification – \$4700

Invited Talks

Introduction to Category Theory

Sage Hill School, January 2018

Guest Lecture, Advanced Topics in Mathematics

Presented an introductory lecture on category theory for students studying basic group theory.

Relational Parametricity for the Polymorphic Blame Calculus

Northeastern University, June 2017

Northeastern University Programming Language Seminar

Presented research on proving parametricity for a gradually typed language with polymorphism.

Abstract Interpretation via Galois Connections

Sage Hill School, March 2017

Guest Lecture, Advanced Topics in Mathematics

Presented Galois connections and their use in soundly approximating uncomputable properties.

Introduction to Constructive Logic and Type Theory

Sage Hill School, March 2016

Guest Lecture, Advanced Topics in Mathematics

Presented introductory material on constructive logic and basic type theory.

Computer Knowledge

Programming Languages: *Proficient in:* Java, Haskell, Python, OCAML, Typed Racket, Racket, JavaScript/HTML/CSS, MIPS and NASM Assembly, Coq *familiar with:* ACL2, C, Rust, Go

Software Skills: Git, Web2Py, Twisted, JQuery, Bootstrap, L^AT_EX, UNIX (OS X/Linux), Angular