Dustin Jamner

Boston, MA

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github.com/DIJamner

Education

Massachusetts Institute of Technology. Cambridge, MA — September 2020 - Present
Department of Electrical Engineering & Computer Science
PhD student in Computer Science

Massachusetts Institute of Technology. Cambridge, MA — May 2022
Department of Electrical Engineering & Computer Science
Master of Science in Electrical Engineering and Computer Science

Northeastern University. Boston, MA — May 2020
Khoury College of Computer Sciences
Bachelor of Science in Computer Science
Minor in Mathematics
GPA/Honors: 3.9/4.0, Honors Program, Dean's List (all semesters)

Oregon Programming Languages Summer School. Eugene, OR — July 2017
An intensive two-week lecture series on foundational concepts and research in programming languages

Experience

Amazon Web Services. Seattle, WA.
Applied Scientist Intern — June - September 2022
Worked on reasoning tools for automatically checking critical properties of existing service code.

Northeastern University. Boston, MA.
Research Assistant (Full-Time) — Summer 2016, January - July 2017, January - June 2019
Solved a decade old open problem by developing the first proof of parametricity, an information hiding property, for a polymorphic, gradual language. In subsequent work, designed a novel language and proved both parametricity and graduality for it via translation to a static language and a logical relation on target terms.

Teaching Assistant — September 2016 - December 2019
Software Development (Fall 2019): Graded students' in-class code reviews and homework and held office hours.
Programming Languages (Fall 2018, Spring 2020): Held office hours, graded homework, exams, and students' in-class code reviews, and proctored exams.
Logic and Computation (Fall 2016, Spring 2017, Summer 2017, Fall 2017, Spring 2019): Led students' lab sections reviewing course material and supervised other teaching assistants. Created homework assignments and proofread the instructor's assignments. Held office hours and graded homework and exams.

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 proof assistant.

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`).

Publications and Workshop Talks

1. Andres Erbsen, Jade Philipoom, Dustin Jamner, Ashley Lin, Samuel Gruetter, Clément Pit-Claudel, and Adam Chlipala.
   Foundational Integration Verification of a Cryptographic Server In *the ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '24)*. Copenhagen, Denmark. June 2024.

2. Dustin Jamner, Gabriel Kammer, and Adam Chlipala.
   Pyrosome: A Framework for Modular, Extensible, Equivalence-Preserving Compilation.

In *the Ninth International Workshop on Coq for PL (CoqPL 2023)*. Boston, Massachusetts, USA. January 2023. Workshop talk.

3. Clément Pit-Claudel, Jade Philipoom, Dustin Jamner, Andres Erbsen, Adam Chlipala.
   Relational Compilation for Performance-Critical Applications.
   In *the ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI '22)*. San Diego, California, USA. June 2022.

4. Max New, Dustin Jamner, and Amal Ahmed.
   Graduality and Parametricity: Together Again for the First Time.
   In *the 47th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL '20)*. New Orleans, Louisiana, United States. January 2020.

5. Chris Casinghino, Michael Dixon, Jt Paasch, Cody Roux, John Altidor and Dustin Jamner.
   Using Binary Analysis Frameworks: The Case for BAP and angr.
   In *the 11th Annual NASA Formal Methods Symposium (NFM 2019)*. Houston, Texas, USA. May 2019.

6. Amal Ahmed, Dustin Jamner, Jeremy Siek, and Philip Wadler.
   Theorems for Free for Free: Parametricity With and Without Types.
   In *the 22nd ACM SIGPLAN International Conference on Functional Programming (ICFP '17)*, Oxford, UK, September 2017.

Service And Mentorship

MIT PL Review, Program Committee 2025

MIT PL Review, Program Chair 2023, 2024
Co-founded the MIT PL Review with a committee of MIT PhD students to highlight recent developments that we believe have significant potential to shape the future direction of PL research and/or industry practice.

ICFP Artifact Evaluation Committee 2023, 2024

Undergraduate Research Opportunity Mentor MIT, Spring 2022-Present
Mentored 4 undergraduate researchers and guided them through contributing meaningful improvements to group research projects.

Graduate Application Assistance Program Mentor MIT, Fall 2020 - 2024
Mentored a total of 13 students from underrepresented groups in preparing their graduate applications to MIT.

Honors Alumni Mentor Northeastern University, 2020-2022
Mentored 2 undergraduate students in 2020, 1 in 2021, and 1 in 2022, including discussing preparation for graduate school and the tradeoffs between academic and industry careers.

Awards

National Science Foundation Graduate Research Fellowship 2020

Robert M. (1941) and Jacqueline M. Fano Fellowship, *MIT* September 2020 - May 2021

Khoury Research Award, *Northeastern University* May 2020

Summer Scholars Independent Research Fellowship, *Northeastern University* July - August 2019

Provost's Advanced Research/Creative Endeavor Award, *Northeastern University* May 2016

Dean's Scholarship, *Northeastern University* September 2015 - April 2020

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.