

Overview

(As of January 2, 2025) I'm a researcher working on using machine learning for code to develop state-of-the-art AI-assisted developer tools to make writing, fixing, and using software easier and more enjoyable.

Education

Academic Qualifications

- 2016-2021 **PhD in Computer Science**
Massachusetts Institute of Technology, Cambridge, MA
- 2013-2016 **Masters in Computer Science**
New York University: Courant Institute of Mathematical Sciences, NY, NY
GPA: 3.89, MS Research/Thesis Fellowship Award Fall 2015, funding work on A2Q (an order-aware optimizing query compiler for AQuery)
- 2007-2011 **Bachelor of Arts in Economics and Minor in German Studies**
University of Pennsylvania, Philadelphia, PA
GPA: 3.93, Phi Beta Kappa, Summa Cum Laude, Dean's List (08, 09, 10)

Industry Work Experience

- 07/2024 – **Staff Software Engineer** *DevAI Team, Google, Atlanta, GA*
current
- 06/2022 – **Senior Researcher** *PROSE Team, Microsoft, Remote*
05/2024
- 06/2021 – **Researcher** *PROSE Team, Microsoft, Remote*
06/2022
 - Working on program synthesis technologies for a variety of developer, data scientist, and end-user applications. A lot of my work focuses on developing and applying large language models to programming tasks, such as program repair and natural language to code synthesis. As part of my job, I also manage and mentor junior researchers through the PROSE research fellowship program.
- Summer 2020 **Intern** *Facebook AI Research, Facebook, Remote*
 - Worked with the SysML team at FAIR on a novel tensor compiler, writing C++ for JIT compilation, benchmarking against Halide/TVM
- Fall 2018 **Part-Time Research Visitor** *Big Code Team, Facebook, Remote*
 - Applied deep learning to identify and highlight core code functionality in early ML4Code models.
- Summer 2018 **Intern** *Software Engineering, Facebook, Boston*
 - Applied deep learning to code search and contributed to some of the earliest ML4Code models in this space.
- Summer 2015 **Intern** *Data Science, Cloudera, San Francisco*
- 2011 – 2014 **Full-Time Securitized Credit Research Associate** *Non-Agency Mortgages and US Housing, Morgan Stanley, New York*

- Summer 2010 **Richard B. Fisher Scholar** *Fixed Income Generalist Sales and Fixed Income Credit Strategy*, Morgan Stanley, New York
- Summer 2009 **Douglas Paul Scholar** *Investment Banking and Alternative Investments*, Morgan Stanley, New York

Academic Work Experience

- Fall and Spring 2021 **Advanced Undergraduate Research Class TA**, MIT
- 2015 – 2016 **Graduate Course in Compiler Construction Grader**, NYU
- Fall 2014 **Graduate Course in Programming Languages Teaching Assistant**, NYU

Language skills

- **Programming Languages:** Proficient in: Python, Javascript/Typescript, R, C#.
- **Natural Languages:** Native fluency in English and Spanish. Working proficiency in German.

Service

- **Program Committee ICSE 2024**
- **Program Committee Table Representation Learning Workshop (at NeurIPS) 2023**
- **Program Committee Table Representation Learning Workshop (at NeurIPS) 2022**
- **Artifact Evaluation Committee OOPSLA 2020**
- **Artifact Evaluation Committee CAV 2020**
- **Artifact Evaluation Committee PPOPP 2018**

Mentoring/Advising

- Jennifer McCleary (MIT) MEng Thesis: pancreatic cancer risk modeling (Fall 2019 - January 2020)
- Alex Berg (MIT) Undergraduate research: pancreatic cancer risk modeling (Summer 2020)
- Thomas Xiong (MIT) MEng Thesis: pancreatic cancer risk modeling (Fall 2020 - Spring 2021)
- Lori Zhang (MIT) Undergraduate research: pancreatic cancer risk modeling (Summer 2020 - Spring 2021)
- Harshit Joshi (Microsoft): PROSE Research fellow, automated program repair (Fall 2021 to July 2023 – joining Stanford PhD program 2023)
- Mukul Singh (Microsoft): PROSE Research fellow, NL-to-Code (Spring 2022 to date)
- Abishai Ebenezer (Microsoft): PROSE Research fellow, automated program repair (Fall 2022 to July 2023)
- Jialu Zhang (Yale/Microsoft): Summer intern in the PROSE team, working on automated program repair (Summer 2022). Part of thesis committee.