

# Michael B. James

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## Research Interests

I research and build human-AI collaborative programming tools. I am interested in how *Programming Languages* techniques, *Human-Computer Interactions* methods, and *Artificial Intelligence* approaches together can automate and simplify interacting with code.

## Education

### University of California, San Diego

Ph.D., Computer Science, 2018-2024 (*expected*)

M.S., Computer Science, 2021

Advisor: Nadia Polikarpova

Fields: Programming Languages, Program Synthesis, Human-Computer Interactions

### Tufts University

B.S., Computer Science, 2015.

## Publications

### Grounded Copilot: How Programmers Interact with Code-Generating Models

*Distinguished Paper Award*

Shraddha Barke\*, **Michael B. James\***, Nadia Polikarpova. *OOPSLA*. October 2023.

### Live Exploration of AI-Generated Programs

Kasra Ferdowsi\*, Ruanqianqian (Lisa) Huang\*, **Michael B. James**, Nadia Polikarpova, Sorin Lerner. *ArXiv*. June 2023.

### Program Recognition in Synthesis

**Michael B. James**, Nadia Polikarpova. *PLATEAU*. November 2021.

### Digging for Fold: Synthesis-aided API Discovery for Haskell

**Michael B. James**, Zheng Guo, Ziteng Wang, Shivani Dosh, Hila Peleg, Ranjit Jhala, Nadia Polikarpova *OOPSLA*. November 2020.

### Program Synthesis by Type-Guided Abstraction Refinement

Zheng Guo, **Michael B. James**, David Justo, Jiaxiao Zhou, Ziteng Wang, Ranjit Jhala, Nadia Polikarpova *47th ACM SIGPLAN Symposium on Principles of Programming Languages (POPL 2020)*. January 2020.

## Work Experience

### Research Intern

Microsoft, Remote, Summer 2022

Mentors: Arjun Radhakrishna, Gustavo Soares

Prototyped novel interactive program synthesis tool

### Software Engineer II

Jana Mobile, Boston, Massachusetts, Feb 2017 - Jun 2018

2018 Created mobile anti-fraud mechanisms and data collection streams

2017 managed data scientists' data collection APIs

## **Software Engineer I**

Uber Technologies, San Francisco, Jul 2015 - Dec 2016

2016    Lead team migration to golang, through anti-fraud microservice

2015    Owned business.uber.com. Migrated to React, using FRP styles

## **Elm Intern**

Prezi, Budapest, Hungary, Summer 2014

Mentor: Evan Czaplicki

Built first interactive, time-traveling debugger for Elm-lang.

This was the first such production tool for any language.

## **Skills**

Haskell, Python, Typescript, Functional Programming, React, Redux, Human-subject study design, Large Language Models

## **Talks**

### **Grounded Copilot: How Programmers Interact with Code-Generating Models**

2023 - OOPSLA 2023 (Cascais, Portugal)

### **Program Recognition in Synthesis**

2021 - PLATEAU 2021 (Carnegie Mellon University)

### **Digging for Fold: Synthesis-aided API Discovery for Haskell**

2021 - OOPSLA 2021 (Chicago)

2020 - OOPSLA 2020 (virtual)

### **Component-based Type Driven Synthesis**

2019 - University of California, San Diego

## **Teaching**

### **Graduate Teaching Assistant**

Fall 2023. UC San Diego.

Supervisor: Nadia Polikarpova

Course: graduate-level programming languages.

### **Graduate Teaching Assistant**

Spring 2022, Spring 2021, Fall 2019. UC San Diego.

Supervisor: Nadia Polikarpova

Course: undergraduate intro-to-programming languages.

### **Undergraduate Teaching Assistant**

Tufts University, Fall 2014

Supervisor: Kathleen Fisher

Course: undergraduate intro-to-programming-languages

## **Service**

Reviewer CHI 2024

Reviewer PLATEAU 2024

PLDI Student Volunteer Co-Chair 2023, 2024

PLDI Student Volunteer 2022

ICFP Artifact Evaluation Committee 2021

ICFP Artifact Evaluation Committee 2020