Anders Miltner

University of Texas at Austin
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RESEARCH INTERESTS

My primary research interest lies in Programming Languages. Specifically, I am interested in developing novel program synthesis techniques, and finding new problems that program synthesis can solve. I am interested in applying my work to Software Engineering and Artificial Intelligence.

EDUCATION

Ph.D. Computer Science 2020
Princeton University, Princeton, NJ
Advisor: David Walker
Thesis: Synthesizing Lenses

M.A. Computer Science 2017
Princeton University, Princeton, NJ
Advisor: David Walker

M.A. Mathematics 2013
University of Pennsylvania, Philadelphia, PA
Advisors: Scott Weinstein and Val Tannen

B.S.E. Computer Science and Mathematics 2013
University of Pennsylvania, Philadelphia, PA
Advisors: Zachary Ives and Philip Gressman

RESEARCH EXPERIENCE

Postdoctoral Fellow 2020 - Present
UT Austin, Austin, TX
Advisors: Isil Dillig and Swarat Chaudhuri

Graduate Researcher 2015 - 2020
Princeton University, Princeton, NJ
Advisor: David Walker

Research Intern 2019
Microsoft, Redmond, WA
Advisors: Sumit Gulwani and Gustavo Soares

Undergraduate Researcher 2011-2012
University of Pennsylvania, Philadelphia, PA
Advisors: Insup Lee and Krishna Venkatasubramanian

AWARDS

Distinguished Paper Award POPL 2022
For the paper *Bottom-up Synthesis of Recursive Functional Programs using Angelic Execution*

Distinguished Paper Award PLDI 2020
For the paper *Data-Driven Inference of Representation Invariants*

Student Research Competition First Place — ICFP 2017
For the work on *Synthesizing Bijective Lenses*

TEACHING EXPERIENCE

Princeton PTI Pod Instructor — Spring 2018
MAT 030 – Intermediate Algebra

Princeton PTI Pod Instructor — Spring 2017, Fall 2017
MAT 020 – Elementary Algebra

Princeton CS Teaching Assistant — Spring 2017
COS 226 – Algorithms and Data Structures

Princeton CS Teaching Assistant — Fall 2016
COS 326 – Functional Programming

Princeton PTI Pod Instructor — Fall 2016
MAT 015 – Basic Mathematics

Princeton PTI Pod Instructor — Spring 2016
MAT 037 – Beginning Algebra

Penn CS Teaching Assistant — Spring 2012, Fall 2012
CIS 160 – Mathematical Foundations of Computer Science

Penn CS Teaching Assistant — Spring 2011, Fall 2011
CIS 120 – Programming Languages and Techniques I

INDUSTRY EXPERIENCE

Software Engineer — 2013 - 2015
Microsoft, Redmond, WA

Engineering Intern — 2012
Ampush, San Francisco, CA

CONFERENCE PUBLICATIONS

POPL 2022
Anders Miltner, Adrian Trejo Nuñez, Ana Brendel, Swarat Chaudhuri, and Isil Dillig. Bottom-up Synthesis of Recursive Functional Programs using Angelic Execution. In Principles of Programming Languages, 2022. *Distinguished Paper Award.*

PLDI 2020
Anders Miltner, Saswat Padhi, Todd Millstein, and David Walker. Data-Driven Inference of Representation Invariants. In Programming Language Design and Implementation, 2020. *Distinguished Paper Award.*

OOPSLA 2019
Anders Miltner, Sumit Gulwani, Vu Le, Alan Leung, Arjun Radhakrishna, Gustavo Soares, Ashish Tiwari, Abhishek Udupa. On the Fly Synthesis of Edit Suggestions. In Object-oriented Programming, Systems, Languages, and Applications, 2019.

ICFP 2019
Anders Miltner, Solomon Maina, Kathleen Fisher, Benjamin C. Pierce, David Walker, Steve Zdancewic. Synthesizing Symmetric Lenses. In The International Conference on Functional Programming, 2019.

ICFP 2018
Solomon Maina, **Anders Miltner**, Kathleen Fisher, Benjamin C. Pierce, David Walker, Steve Zdancewic. Synthesizing Quotient Lenses. In The International Conference on Functional Programming, 2018.

POPL 2018
Anders Miltner, Kathleen Fisher, Benjamin C. Pierce, David Walker, Steve Zdancewic. Synthesizing Bijective Lenses. In Principles of Programming Languages, 2018.

WORKSHOP PUBLICATIONS

IWC 2020
Anders Miltner, Kathleen Fisher, Benjamin C. Pierce, David Walker, Steve Zdancewic. Confluence in Lens Synthesis. In The International Workshop on Confluence, 2020.

PATENTS

2021
Sumit Gulwani, Arjun Radhakrishna, Abhishek Udupa, Gustavo Soares, Vu Le, **Anders Miltner**, Mark Wilson-Thomas. Automatic Repetition of Context-Specific Code Edits.

SERVICE

PLDI 2022
Program Committee

ICFP 2021
Student Research Competition Chair

OOPSLA 2020
Artifact Evaluation Committee

BX 2019
Program Committee

ESOP 2019
External Reviewer

TOPLAS 2017
External Reviewer

PLDI 2017
Artifact Evaluation Committee