

Anders Miltner

Simon Fraser University
8888 University Drive, TASC I 9203, Burnaby, BC V5A 1S6
415-342-3622
miltner@cs.sfu.ca

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	<i>Ph.D. Computer Science</i> Princeton University, Princeton, NJ Advisor: David Walker Thesis: Synthesizing Lenses	2020
	<i>M.A. Computer Science</i> Princeton University, Princeton, NJ Advisor: David Walker	2017
	<i>M.A. Mathematics</i> University of Pennsylvania, Philadelphia, PA Advisors: Scott Weinstein and Val Tannen	2013
	<i>B.S.E. Computer Science and Mathematics</i> University of Pennsylvania, Philadelphia, PA Advisors: Zachary Ives and Philip Gressman	2013
RESEARCH EXPERIENCE	<i>Assistant Professor</i> Simon Fraser University, Burnaby, BC	2022 - Present
	<i>Postdoctoral Fellow</i> UT Austin, Austin, TX Advisors: Isil Dillig and Swarat Chaudhuri	2020 - 2022
	<i>Graduate Researcher</i> Princeton University, Princeton, NJ Advisor: David Walker	2015 - 2020
	<i>Research Intern</i> Microsoft, Redmond, WA Advisors: Sumit Gulwani and Gustavo Soares	2019
	<i>Undergraduate Researcher</i> University of Pennsylvania, Philadelphia, PA Advisors: Insup Lee and Krishna Venkatasubramanian	2011-2012
AWARDS	<i>DARPA Risers</i>	2022
	<i>Distinguished Paper Award</i> For the paper <i>Bottom-up Synthesis of Recursive Functional Programs using Angelic</i>	POPL 2022

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*

GRANTS *NSERC Discovery Launch* 2023-2028
Automating Data Representation Changes \$12,500

NSERC Discovery 2023-2028
Automating Data Representation Changes \$180,000

TEACHING EXPERIENCE *SFU CMPT Instructor* Spring 2022
CMPT 489/980 – Special Topics in Programming Languages

SFU CMPT Instructor Fall 2022
CMPT 383 – Comparative Programming Languages

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 Dilig. 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**

LangSec 2022

Anders Miltner, Devon Loehr, Arnold Mong, Kathleen Fisher, David Walker. Linguistic Tools for Managing Grammatical Domains (Work in Progress). In The LangSec Workshop, 2022.

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 2024

Publicity Co-Chair

ESOP 2024

Program Committee

POPL 2024

Workshops Co-Chair

PLDI 2023

Publicity Co-Chair

POPL 2023

Workshops Co-Chair

APLAS 2022
Program Committee

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