

JASPER GEER

jasper.geer@ubc.ca | www.jaspergeer.com

EDUCATION

University of British Columbia

2024-Present

Vancouver, British Columbia, Canada

Computer Science, PhD

Supervised by Prof. Alexander J. Summers

- Research in Programming Languages and Formal Verification in the UBC Software Practices Lab.
- Primarily interested in Rust verification, separation logic, and type systems.
- Contributor to Prusti, a Rust verifier developed in collaboration with ETH Zurich.

Tufts University

2020-2024

Medford, Massachusetts, USA

Computer Science, BS

summa cum laude

RESEARCH EXPERIENCES

Verifying Safe Clients of Interior Mutability

August 2025 - Present

with Alexander J. Summers

University of British Columbia

- Developing formal underpinnings in separation logic for a verification methodology for safe clients of interior-mutable modules in Rust.
- Exploring extensions to the specification language and proof technique to support a wider range of use cases.

Place Capability Graphs

January 2025 - 2025

with Alexander J. Summers

University of British Columbia

- Developed a MIR-level mutation testing tool for the Rust compiler to evaluate the trustworthiness of Place Capability Graphs, a model of Rust's type checking results.
- Co-author on paper published in OOPSLA 2025.

Type- and Name-Guided Program Synthesis

September 2023 - September 2025

with Jeffrey Foster

Tufts University

- Implemented and formalized a subtyping constraint-guided program synthesis technique for Java programs.
- Developed search heuristics to make a larger class of synthesis problems tractable.

Technical Limitations and Novel Use Cases for Symbolic Execution

September 2023 - May 2024

with Daniel Votipka

Tufts University

- Participated in an extensive review of recent symbolic execution and automated testing literature.
- Qualitatively coded rounds of 5-10 research papers and contributed to codebook development.

PROFESSIONAL EXPERIENCES

Vehicle Software Intern

May 2023 - August 2023

Tesla

- End-to-end feature development in Haskell for an incremental compiler frontend.
- Refactored compiler passes into incremental build rules for a monadic build system.
- Created embedded domain-specific languages to implement new language server features.
- Received offer for full-time conversion.

TEACHING

University of British Columbia, Graduate Teaching Assistant

September 2024 - Present

- CPSC411, Compilers. *Spring 2024*.
- CPSC311, Definition of Programming Languages. *Fall 2024*.

Tufts University, Teaching Fellow

January 2024 - May 2024

- CS170, Computation Theory. *Spring 2024*.

Tufts University, Course Assistant

September 2022 - December 2023

- CS170, Computation Theory. *Fall 2022, Spring 2023, Fall 2023*.

Coding With Kids

May 2022 - September 2022

- Taught week-long programming classes for primary and secondary school students.

PUBLICATIONS

Zachary Grannan, Aurel Bily, Jonáš Fiala, **Jasper Geer**, Markus de Medeiros, Peter Müller, and Alexander J. Summers. 2025. *Place Capability Graphs: A General-Purpose Model of Rust's Ownership and Borrowing Guarantees*. Proc. ACM Program. Lang. 9, OOPSLA2, Article 344 (October 2025), 28 pages. <https://doi.org/10.1145/3763122>

AWARDS

Four Year Doctoral Fellowship (4YF), University of British Columbia

Jan 2026 - Dec 2029

SERVICE

Reviewer, UBC Computer Science Student Research Conference

January 2026

VP Social, UBC Computer Science Graduate Student Association

May 2025 - April 2026

Tuesday Tea Organizer, UBC Computer Science Graduate Student Association

May 2025 - April 2026

PL Reading Group Organizer, UBC Software Practices Lab

September 2024 - Present

PROGRAMMING BACKGROUND

Recent experience with Rust and Scala.

Previous experience with OCaml, Standard ML, Haskell, Racket, C, and Java.