

EDUCATION

- **University of Toronto** Spring 2021 (Expected)
B.Sc. (Hons) in Computer Science, GPA: 3.93/4.00
- **University of Toronto** 2013
B.A. (Hons) in Philosophy

SELECTED COURSEWORK

- **Computer Science**
Software Testing and Verification, Programming Languages, Computability and Logic, Quantum Computing
- **Math**
Algebra I & II, Combinatorics, Number Theory, Chaos and Dynamics

RESEARCH INTERESTS

Formal methods, automated formal verification, programming language theory, concurrency, distributed computing, theory of computation, privacy and security, cryptography, quantum computing.

TEACHING

- **Teaching Assistant** at University of Toronto 2019-2020
 - CSC165: Mathematical Expression and Reasoning (Winter 2020)
 - CSC324: Principles of Programming Languages (Fall 2019)
 - CSC148: Introduction to Computer Science (Winter 2019)

As a teaching assistant, I graded assignments, assisted students one-on-one during office hours, monitored and contributed to student discussion forums, and invigilated exams. In addition, I led a weekly practicum for CSC148; during these sessions, I helped students complete lab assignments, guided class discussion on weekly topics, administered quizzes, and took up homework problems.

RESEARCH

- **Research Assistant** Summer 2020
 - Supervisor: Azadeh Farzan
 - Project Title: Symmetry Reduction for Automated Formal Verification of Concurrent Programs

In this project, I investigated the use of symmetry reductions for more efficient automated formal verification of programs which exhibit a high degree of symmetry, such as multi-threaded programs. In doing so, I formalized the notion of symmetry in the context of trace abstraction, designed algorithms for symmetry-reduced verification, and evaluated the algorithms for efficiency, soundness and completeness. I subsequently implemented these algorithms in an automated formal verification tool called Weaver (written in Haskell).

- **Computer Science Project (CSC494)** Winter 2020
 — Supervisor: Azadeh Farzan
 — Project Title: Automated Formal Verification of Concurrent Programs

In this project, I explored the use of reductions in verification of concurrent programs by doing a literature survey with a focus on interpolation, infinite tree automata, and partial order reduction.

- **Research Opportunity Project (ROP399) (Declined)** Fall 2019

EMPLOYMENT

- **Software Developer** 2013-2017
 — Mercatus (Oct 2015-Nov 2016)
 — Toronto International Film Festival (Dec 2014-Aug 2015)
 — Freelance (2013-2017)

CO-CURRICULAR

- **Review of Undergraduate Computer Science (RUCS)** 2017-Current
 — Senior Advisor (2019-Current)
 — Editor-in-Chief (2018-2019)
 — Editor (2017-2018)

The Review of Undergraduate Computer Science (RUCS) is a non-archival open-access journal founded in 2015. We publish one edition per year featuring undergraduate computer science research at the University of Toronto and elsewhere. As an editor, I evaluated, reviewed, and edited submissions. As editor-in-chief, I led a team of eight volunteers in publishing our yearly edition. In addition, I spearheaded several new projects such as a website redesign, publication of the Undergraduate Research Guide, and several student outreach initiatives such as the UGSRP Meet & Greet and the RUCS/TURCS Speaker Series.

- **CS Research-A-Thon** Winter 2019, Winter 2020
 Founder & Lead Organizer

As the founder and lead organizer of the CS Research-A-Thon, my responsibilities include event planning, writing and giving presentations for Research-A-Thon participants, recruiting and leading a team of volunteers, and communicating with faculty members and students to devise miniature research projects for participants.

SKILLS

- Programming Languages: *Proficient*: Haskell, Python, Javascript. *Competent*: Java, C, C++, Bash, Racket, Dafny
- Tools, Frameworks, etc: Linux, Git, Django, React, Jekyll

AWARDS

- Dean's List 2019, 2020
- NSERC Undergraduate Student Research Award Summer 2020

LANGUAGES

- *Fluent*: English, French.
- *Limited Proficiency*: Spanish, German