

Logan Murphy | Curriculum Vitae

Toronto – Canada

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Education

Doctor of Philosophy University of Toronto, Department of Computer Science Supervisor: Marsha Chechik	2022–2026
Master of Science University of Toronto, Department of Computer Science Supervisor: Marsha Chechik	2020–2022
Bachelor of Science with First Class Honours Saint Francis Xavier University, Department of Computer Science	2016–2020

Selected Publications

Conference Proceedings

- **Logan Murphy**, Torin Viger, Alessio Di Sandro, and Marsha Chechik. *PLACIDUS: Engineering Product Lines of Rigorous Assurance Cases*. International Conference on Integrated Formal Methods (iFM 2024). **[Best Paper Award]**
- **Logan Murphy**, Kaiyu Yang, Jialiang Sun, Zhaoyu Li, Anima Anandkumar, and Xujie Si. *Autoformalizing Euclidean Geometry*. International Conference on Machine Learning (ICML 2024).

Journal Articles

- **Logan Murphy**, Torin Viger, Alessio Di Sandro, Aren A. Babikian, and Marsha Chechik. *Assurance Case Development for Evolving Software Product Lines: A Formal Approach*. Formal Aspects of Computing (2026).
- **Logan Murphy**, Mahmood Saifi, Alessio Di Sandro, and Marsha Chechik. *A Structural Taxonomy for Lifted Software Product Line Analyses*. Journal of Systems and Software (2025).

For a complete list of my co-authored publications, [see here](#).

Teaching

Course Instructor

Software Testing and Verification (CSC410) Fall 2025

Teaching Assistant

Enriched Introduction to the Theory of Computing (CSC240)	6 Appointments (2021 - 2026)
Introduction to the Theory of Computing (CSC236)	6 Appointments (2021 - 2026)
Topics in Programming Languages: Types and Effects (CSC2126)	1 Appointment (2024)
Software Testing and Verification (CSC410)	3 Appointments (2020 - 2023)

All teaching appointments held at the University of Toronto

Academic Service

Program Committee Member.....

International Conference on Formal Methods in Software Engineering (FormaliSE) 2026-2027

- *Distinguished Reviewer Award* (2026)

Artifact Evaluation Chair.....

Int'l Conference on Foundations and Formal Methods for Software and Systems (IFS) 2027

Artifact Evaluation Committee Member.....

ESOP/ FASE/FoSSaCS (ETAPS) 2026

Reviewer.....

Formal Aspects of Computing 2026

Journal of Logical and Algebraic Methods in Programming 2026

Software and Systems Modeling 2026

Professional Experience

Senior Software Safety Scientist

August 2026 – Present

Critical Systems Labs

- o Developing rigorous assurance cases for safety-critical systems

Software Engineering Intern

May – Sept 2022

CertiK, LLC

- o Designed and implemented improvements to symbolic model checking toolchain
- o Conducted study comparing alternative verification strategies and theorem provers
- o Coordinated with smart contract auditors to align tool design priorities

Skills and Expertise

Natural Languages.....

English (native), French (proficient)

Programming Languages.....

C, C++, Python, Haskell, Lean

Automated Reasoning Tools.....

SAT/SMT Solvers, Model Checkers, Proof Assistants (Coq, Lean)

Other.....

Formal specification languages, structured assurance cases, temporal and modal logics.