Logan Murphy | Curriculum Vitae

Toronto – Canada

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Education

Doctor of Philosophy   **2022–Present**
University of Toronto, Department of Computer Science
Supervisor: Marsha Chechik.

Master of Science   **2020–2022**
University of Toronto, Department of Computer Science
Supervisor: Marsha Chechik

Bachelor of Science with First Class Honours   **2016–2020**
Saint Francis Xavier University, Department of Computer Science

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)*
Topics in Programming Languages: Types and Effects (CSC2126)   *1 Appointment (2024)*
Introduction to the Theory of Computing (CSC236)   *5 Appointments (2021 - 2025)*
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*

Artifact Evaluation Committee Member...

ESOP, FASE and FoSSaCS Artifact Evaluation   *2026*

Professional Experience

Software Engineering Intern   **May – Sept 2022**

CertiK, LLC

○ Designed and implemented improvements to symbolic model checking toolchain
○ Conducted study comparing alternative verification strategies and theorem provers
○ 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, domain-specific languages, temporal and modal logics.