

# Logan Murphy | Curriculum Vitae

Toronto – Canada

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## Education

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<b>Doctor of Philosophy</b> University of Toronto, Department of Computer Science <b>Supervisor:</b> Marsha Chechik.	<b>2022–Present</b>
<b>Master of Science</b> University of Toronto, Department of Computer Science <b>Supervisor:</b> Marsha Chechik	<b>2020–2022</b>
<b>Bachelor of Science with First Class Honours</b> Saint Francis Xavier University, Department of Computer Science	<b>2016–2020</b>

## Selected Publications

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### 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

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### Course Instructor

Software Testing and Verification (CSC410) *Fall 2025*

### Teaching Assistant

Enriched Introduction to the Theory of Computing (CSC240)	<i>6 Appointments (2021 - 2026)</i>
Topics in Programming Languages: Types and Effects (CSC2126)	<i>1 Appointment (2024)</i>
Introduction to the Theory of Computing (CSC236)	<i>5 Appointments (2021 - 2025)</i>
Software Testing and Verification (CSC410)	<i>3 Appointments (2020 - 2023)</i>

All teaching appointments held at the University of Toronto

## Academic Service

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### Program Committee Member

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

- *Distinguished Reviewer Award*

### Artifact Evaluation Committee Member

ESOP/ FASE/FoSSaCS (ETAPS) 2026

### Reviewer

Formal Aspects of Computing 2026

## Professional Experience

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### 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

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### 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.