Jeremy S. Bradbury – CURRICULUM VITAE

Professor, Computer Science, Faculty of Science
Ontario Tech University

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Research Interests	Software quality assurance, software testing and analysis, mutation testing, bug detection and repair, concurrent software, genetic algorithms, machine learning, Computer Science education, serious games.

Professional Experience

Ontario Tech University, Oshawa, ON, Canada
Associate Professor (July 2013-Present),
Assistant Professor (July 2007-June 2013)
Researcher and leader of the Software Engineering & Education Research Lab (https://www.seerlab.ca).

Associate Dean, School of Graduate and Postdoctoral Studies (Jan. 2021-Dec. 2023)
Responsible for administration of graduate studies at the university-level and a contributor to graduate studies governance and strategy.

Graduate Program Director (July 2015-June 2017)
Responsible for coordinating the multi-faculty Computer Science MSc and PhD programs.

Undergraduate Program Director (July 2011-June 2013, July 2020-Dec. 2020)
Responsible for coordinating Computer Science BSc programs.

Queen's University, Kingston, ON, Canada
Graduate student (2000-07)
Member of the Software Technology Laboratory, researcher (MSc, PhD), teaching assistant.

Mount Allison University, Sackville, NB, Canada
Research Assistant (May to Aug. 1998, 1999, May to Jun. 2000)
Research conducted under the supervision of Dr. Robert Rosebrugh in computation category theory.

Education

Ph.D. Computer Science, 2007
Queen's University, Kingston, Ontario, Canada
Supervisors: Dr. James R. Cordy and Dr. Juergen Dingel
Dissertation Title: Using Program Mutation for the Empirical Assessment of Fault Detection Techniques: A Comparison of Concurrency Testing and Model Checking

M.Sc. Computing and Information Science, 2002
Queen's University, Kingston, Ontario, Canada
Supervisor: Dr. Juergen Dingel
Dissertation Title: Model Checking Implicit-Invocation Systems: An Approach to the Automatic Analysis of Architectural Styles

B.Sc. First Class Honours with Distinction in Computer Science and Mathematics, 2000
Mount Allison University, Sackville, New Brunswick, Canada

Honours & Awards

Paper Awards and Honours

- *RAISE 2012 Best Paper Award* for “Predicting Mutation Score Using Source Code and Test Suite Metrics,” the Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE 2012).
- *CSER 2011 Fall Meeting Best Poster Award* for “Eclipticon: Eclipse Plugin for Concurrency Testing,” the Consortium for Software Engineering Research (CSER) Fall 2011 Meeting (one of three best poster awards).
- *SoftVis’10 Best Poster Award* for "TIE: An Interactive Visualization of Thread Interleavings", the 5th ACM Symposium on Software Visualization (SoftVis'10).
- *SCAM 2010 Special Journal Issue Invitation* for "How Good is Static Analysis at Finding Concurrency Bugs?", the 10th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2010).
- *SCAM 2005 Special Journal Issue Invitation* for "Implementation and Verification of Implicit-Invocation Systems Using Source Transformation," the 5th International Workshop on Source Code Analysis and Manipulation (SCAM 2005).

Teaching Awards

- The Tim McTiernan Student Mentorship Award, Ontario Tech University, 2018-19.

- Faculty of Science nominee, UOIT Teaching Excellence Award (Tenured & Tenure-Track Faculty), Ontario Tech University, 2015-16.
- School of Computing Award for Excellence in Teaching Assistance, Queen's University, 2002-03.

Research Grants

"Transformative Adversaries: Leveraging Generative Pretrained Transformers (GPTs) for the Development of Next-Generation Metamorphic Malware Engines," National Cybersecurity Consortium (NCC), Research and Development Projects Grant - Science/Technology relating to Network Security (2024), awarded $382,352.94 over 3 years.
Investigators: Pooria Madani (PI), Jeremy Bradbury, Khalil El-Khatib, Natalija Vlajic.

"eXcellence In Variant Testing (XIVT)," industry partnership (2019) awarded $255,750 over 3 years.
Investigators: Jeremy Bradbury (PI), Akramul Azim, Khalil El-Khatib.
[Note: This funding is part of an ITEA 3 Call 4 Pan-European Project that was approved in 2018. The funding amount listed is the institutional amount received through a contract with partner QA Consultants.]

"Utilizing Artificial Intelligence to Improve the Testing and Debugging of Concurrent Software," NSERC Discovery Grant (2018), awarded $23,000/year for 5 years.

"Testing and Analysis of Concurrent and Heterogeneous Computing Software," NSERC Discovery Grant (2013), awarded $15,000/year for 5 years.

"Laboratory for Human-Centered Computer Science Research," Canada Foundation for Innovation (CFI) Leaders Opportunity Fund (2012), awarded $21,152.
Investigators: Jeremy Bradbury (PI), Christopher Collins, and Julie Thorpe.

"Empirical Assessment and Improvement of Fault Detection Techniques for Concurrent Software," NSERC Discovery Grant (2008), awarded $15,000/year for 5 years.

Teaching Grants

"Inclusive and Experiential Pedagogies for Undergraduate Mathematics and Computer Science Instruction," eCampusOntario Virtual Learning Strategy (VLS) – Second Round, awarded $104,586.
Investigators: Robyn Ruttenberg-Rozen (PI), Jeremy Bradbury, Ami Mamolo, Miroslav Lovric.

"A Collaborative Quiz Question Bank for First Year Computer Science Courses," eCampusOntario Virtual Learning Strategy (VLS), awarded $40,000.
Investigators: Wendy Powley (PI), Steven Beauchemin, Jeremy Bradbury, Carmen Bruni, David Sprague.

"Serious Games for Computer Science Learning." UOIT Teaching Innovation Fund Grant (2018), awarded $13,000.
Investigators: Jeremy Bradbury, Michael Miljanovic.

"Enhancing First Year Programming Labs Using Game-Based Learning," UOIT Teaching Innovation Fund Grant (2016), awarded $8,000.
Investigators: Jeremy Bradbury, Michael Miljanovic.

"An Online Testing and Evaluation Environment for Computer Programming Courses," UOIT Teaching Innovation Fund Grant (2009), awarded $7,500.
Investigators: Jeremy Bradbury, Faisal Qureshi.

XE: A Secure Laptop-based Examination Environment," UOIT Teaching Innovation Fund Grant (2009), awarded $7,500.
Investigators: Dhavide Aruliah, Jeremy Bradbury, Ken Pu, Janice Strap.

"A Linux-based Environment for Undergraduate Computer Science Education," UOIT Teaching Innovation Fund Grant (2008), awarded $6,500.
Investigators: Jeremy Bradbury, Mark Green, Ken Pu.

Teaching Experience

Ontario Tech University, Oshawa, ON, Canada, 2007-Present

Undergraduate Courses Instructed

- CSCI 1060U (formerly CSCI 2030U) - Programming Workshop, 2009-13, 2015 (x2), 2016, 2018, 2020
- CSCI 2010U: Principles of Computer Science, 2014
- CSCI 2050U - Computer Architecture I, 2007
- CSCI 3040U - Soft. Eng. I: Requirements, Design and Analysis, 2008-10
- CSCI 3050U - Computer Architecture II, 2008
- CSCI 3060U - Soft. Eng. II: Software Quality Assurance/ENGR 3980U Software Quality, 2008-13, 2015-17, 2021-22, 2025
- CSCI 4060U – Massively Parallel Programming (formerly Multicore and Many-Core Programming), 2017-18, 2023, 2025
- CSCI 4100U - Mobile Devices, 2011

- CSCI 4620U - Human-Computer Interaction/ENGR 4850U - User Interfaces, 2008-09

Graduate Courses Instructed

- CSCI 5010G – Survey of Computer Science Research Topics & Methods, 2015-20, 2023-24
- CSCI 5020G - Collaborative Design and Research, 2011
- CSCI 5100G - Development of Concurrent Software Systems, 2010(x2), 2012, 2014
- CSCI 5540G - User Interface Technology, 2009
- CSCI 6100G: Advanced Topics in Software Design (Applications of AI in Software Engineering), 2017, 2019, 2022
- CSCI 6100G: Advanced Topics in Software Design (Applications of LLMs in Software Engineering), 2024
- CSCI 6720G Advanced Topics in Information Science (Search-based Algorithms), 2011

Other Teaching Contributions

- Guest lecture in CSCI 5010G: Survey of Computer Science, 2009, 2010, 2014, 2021
- Guest lecture in CSCI 1030U: Introduction to Computer Science, 2009, 2011-12
- Lectured for 2 weeks in MCSC 6010G: Mathematical Modelling, 2009
- Organized Teaching Assistants Workshop – "Marking Assignments", 2010-12
- Guest lecture in SCIE 1910U: Science in Context, 2008
- Participant on Teaching Panel at New Faculty Orientation, 2008

Queen's University, Kingston, ON, Canada, 2000-07

Undergraduate Courses Instructed

- CISC 327- Software Quality Assurance, 2005

Teaching Development

- Program in University Teaching and Learning for Teaching Assistants, Instructional Development Centre, Queen's University, 2003-05
- SGS 901 - Teaching and Learning in Higher Education, Instructional Development Centre Course, Queen's University, 2003

Other Teaching Contributions

- Co-organizer of School of Computing Teaching Assistant training session, 2002

Book Chapters[1]

[B1] Stacey Koornneef, **Jeremy S. Bradbury**, Michael A. Miljanovic, Miriam Sturdee. "Using Tangible and Hybrid Interfaces to Address Student Collaboration and Mistakes in K-5 Computational Thinking Games." Accepted book chapter, Apr. 2025, 21 pages . *[to appear]*

[B2] Michael A. Miljanovic, **Jeremy S. Bradbury**. "Engineering Adaptive Serious Games Using Machine Learning." in Software Engineering for Games in Serious Contexts – Theories, Methods, Tools, and Experiences, 2023, 17 pages.

Refereed Journal Publications[1]

[J1] *John K. Jacoub*, Ramiro Liscano, **Jeremy S. Bradbury**. "Assessment of Software Modeling Techniques for Wireless Sensor Networks: A Survey", Sensors & Transducers Journal, 14-2, pages 18-46, Mar. 2012.

[J2] Hongyu Zhang, **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "Using Source Transformation to Test and Model Check Implicit-Invocation Systems", Special Issue on Source Code Analysis and Manipulation, Science of Computer Programming, 62(3), pages 209–227, Oct. 2006.

Other Journal Publications

[J3] Lydie du Bousquet, **Jeremy S. Bradbury**, Gordon Fraser. "Guest Editorial for Special Issue on Mutation Testing", Science of Computer Programming, Aug. 2012.

[J4] Benoit Baudry, **Jeremy S. Bradbury**, Gordon Fraser. "Guest Editorial for Special Section on Mutation Testing", Information & Software Technology, 53(10), pages 1097, Oct. 2011.

Refereed Conference & Workshop Publications

[C1] **Jeremy S. Bradbury**, Riddhi More. "Addressing Data Leakage in HumanEval Using Combinatorial Test Design." *Proc. of the International Conference on Software Testing, Verification and Validation (ICST 2025) – Short Papers, Vision and Emerging Results Track*, Napoli, Italy, Mar./Apr. 2025.

[C2] Riddhi More, **Jeremy S. Bradbury**. "An Analysis of LLM Fine-Tuning and Few-Shot Learning for Flaky Test Detection and Classification." *Proc. of the International Conference on*

Software Testing, Verification and Validation (ICST 2025), Napoli, Italy, Mar./Apr. 2025.

[C3] Riddhi More, **Jeremy S. Bradbury**. "Assessing Data Augmentation-Induced Bias in Training and Testing of Machine Learning Models." *Proc. of the 1st International Workshop on Fairness in Software Systems (FAIRNESS 2025),* Montreal, PQ, Canada, Mar. 2025.

[C4] Amanda Showler, Michael A. Miljanovic, **Jeremy S. Bradbury**. "How Effective and Efficient Are Student-Written Software Tests?" *Proc. of the Technical Symposium on Computer Science Education (SIGCSE 2025),* Pittsburgh, PA, USA, Mar. 2025.

[C5] Kashif Hussain, Christopher Collins, **Jeremy S. Bradbury**. "PIE: A Tool for Visualizing the Lifecycle of Design Patterns in Open Source Software Projects." *Proc. of the 12th IEEE Working Conference on Software Visualization (VISSOFT 2024) – Tools Track*, Flagstaff, AZ, USA, Oct. 2024.

[C6] Nadia L. Goralski, **Jeremy S. Bradbury**. "Adapting Between Parsons Problems and Coding Tasks." *Proc. of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE 2023) – Posters*, Toronto, Canada, March 2023, pages 1289.

[C7] Stacey A. Koornneef, **Jeremy S. Bradbury**, Michael A. Miljanovic. "Run, Llama, Run: A Computational Thinking Game for K-5 Students Designed to Support Equitable Access." *Proc. of the 54th ACM Technical Symposium on Computer Science Education (SIGCSE 2023) – Posters*, Toronto, Canada, March 2023, pages 1395.

[C8] Jude Arokiam, **Jeremy S. Bradbury**. "Automatically Predicting Bug Severity Early in the Development Process," *Proc. of the 42nd International Conference on Software Engineering (ICSE 2020), The New Ideas and Emerging Results (NIER) track*, Seoul, South Korea, Oct. 2020.

[C9] Michael A. Miljanovic, **Jeremy S. Bradbury**. "GidgetML: An Adaptive Serious Game for Enhancing First Year Programming Labs," *Proc. of the 42nd International Conference on Software Engineering (ICSE 2020), The Software Engineering Education and Training (SEET) track*, Seoul, South Korea, Oct. 2020.

[C10] Michael A. Miljanovic, **Jeremy S. Bradbury**. "A Review of Serious Games for Programming," *Proc. of the Joint*

Conference on Serious Games (JCSG 2018), pages 204-216, Darmstadt, Germany, Nov. 2018.

[C11] Michael A. Miljanovic, **Jeremy S. Bradbury**. "Evolving Serious Programming Games with Adaptivity to Enhance Learning," *Proc. of the Joint Conference on Serious Games (JCSG 2018)*, pages 253-259, Darmstadt, Germany, Nov. 2018.

[C12] Michael A. Miljanovic, **Jeremy S. Bradbury**. "RoboBUG: A Serious Game for Learning Debugging," *Proc. of the 13th Annual ACM International Computing Education Research Conference (ICER 2017)*, pages 93-100, Tacoma, WA, USA, Aug. 2017.

[C13] Michael A. Miljanovic, **Jeremy S. Bradbury**. "Robot ON!: A Serious Game for Improving Programming Comprehension," *Proc. of the 5th International Workshop on Games and Software Engineering (GAS 2016)*, Austin, Texas, USA, May 2016.

[C14] David Kelk, Kevin Jalbert, **Jeremy S. Bradbury**. "Automatically Repairing Concurrency Bugs with ARC," *Proc. of the 1st International Conference on Multicore Software Engineering, Performance, and Tools (MUSEPAT 2013)*, pages 73-84, Saint Petersburg, Russia, Aug. 2013.

[C15] **Jeremy S. Bradbury**, David Kelk, Mark Green. "Effectively Using Search-Based Software Engineering Techniques within Model Checking and It's Applications," *Proc. of the 1st International Workshop on Combining Modelling and Search-Based Software Engineering (CMSBSE 2013)*, pages 67-70, San Francisco, CA, USA, May 2013.

[C16] John K. Jacoub, Ramiro Liscano, **Jeremy S. Bradbury**, Jared Fisher. "UML Modelling of Design Patterns for Wireless Sensor Networks," *Proc. of the 2nd International Conference on Sensor Networks (SENSORNETS 2013)*, Barcelona, Spain, Feb. 2013.

[C17] **Jeremy S. Bradbury**, Itai Segall, Eitan Farchi, *Kevin Jalbert*, *David Kelk*. "Using Combinatorial Benchmark Construction to Improve the Assessment of Concurrency Bug Detection Tools," *Proc. of the 10th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD 2012)*, pages 25-35, Minneapolis, Minnesota, Jul. 2012.

[C18] *Kevin Jalbert* and **Jeremy S. Bradbury**. "Predicting Mutation Score Using Source Code and Test Suite Metrics", *Proc. of the*

Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE 2012), Zurich, Switzerland, Jun. 2012, 5 pp.

[C19] *John K. Jacoub*, Ramiro Liscano, **Jeremy S. Bradbury**. "A Survey of Modeling Techniques for Wireless Sensor Networks", *Proc. of the 5th International Conference on Sensor Technologies and Applications (SENSORCOMM 2011)*, pages 103-109, Nice/Saint Laurent du Var, France, Aug. 2011.

[C20] Ahmad A. Saifan, Juergen Dingel, **Jeremy S. Bradbury**, Ernesto Posse. "Implementing and Evaluating a Runtime Conformance Checker for Mobile Agent Systems", *Proc. of the 4th IEEE International Conference on Software Testing, Verification and Validation (ICST 2011)*, pages 269-278, Berlin, Germany, Mar. 2011.

[C21] *Gowritharan Maheswara*, **Jeremy S. Bradbury**, Christopher Collins. "TIE: An Interactive Visualization of Thread Interleavings", *Proc. of the 5th ACM Symposium on Software Visualization (SoftVis'10)*, pages 215-216, Salt Lake City, Utah, USA, Oct. 2010.

[C22] *Kevin Jalbert*, **Jeremy S. Bradbury**. "Using Clone Detection to Identify Bugs in Concurrent Software", *Proc. of 26th IEEE International Conference on Software Maintenance (ICSM 2010),* Timisoara, Romania, Sept. 2010, 5 pp.

[C23] *Devin Kester*, *Martin Mwebesa* and **Jeremy S. Bradbury**. "How Good is Static Analysis at Finding Concurrency Bugs?", *Proc. of the 10th IEEE International Working Conference on Source Code Analysis and Manipulation (SCAM 2010)*, pages 115-124, Timisoara, Romania, Sept. 2010.

[C24] **Jeremy S. Bradbury**, *Kevin Jalbert*. "Automatic Repair of Concurrency Bugs", *Proc. of the 2nd International Symposium on Search Based Software Engineering (SSBSE 2010) - Fast Abstracts*, Benevento, Italy, Sept. 2010, 2pp.

[C25] **Jeremy S. Bradbury** and *Kevin Jalbert*. "Defining a Catalog of Programming Anti-Patterns for Concurrent Java", In*Proc. of the 3rd International Workshop on Software Patterns and Quality (SPAQu'09)*, pages 6-11, Orlando, Florida, USA, Oct. 2009.

[C26] **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "Comparative Assessment of Testing and Model Checking Using Program Mutation", In Proc. of the *3rd*

Workshop on Mutation Analysis (Mutation 2007), pages 210-219, Windsor, UK, Sept. 2007.

[C27] L. Ruhai Cai, **Jeremy S. Bradbury**, Juergen Dingel. "Verifying Distributed, Event-Based Middleware Applications using Domain-Specific Software Model Checking", In Proc. of *9th IFIP WG 6.1 International Conference on Formal Methods for Open Object-Based Distributed Systems (FMOODS'07)*, Springer Verlag. Lecture Notes in Computer Science 4468. pages 44-58. Paphos, Cyprus. June 2007.

[C28] **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "Mutation Operators for Concurrent Java (J2SE 5.0)", In Proc. of the *2nd Workshop on Mutation Analysis (Mutation 2006)*, pages 83-92, Raleigh, North Carolina, USA, Nov. 2006.

[C29] **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "ExMAn: A Generic and Customizable Framework for Experimental Mutation Analysis", In Proc. of the *2nd Workshop on Mutation Analysis (Mutation 2006)*, pages 57-62, Raleigh, North Carolina, USA, Nov. 2006.

[C30] **Jeremy S. Bradbury**. "Using Mutation for the Assessment and Optimization of Tests and Properties", *Doctoral Symposium being held in conjunction with the International Symposium on Software Testing and Analysis (ISSTA 2006)*, Portland Maine, USA, July 2006, 4 pp.

[C31] **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "An Empirical Framework for Comparing Effectiveness of Testing and Property-Based Formal Analysis", In Proc. of the *6th International ACM SIGPLAN-SIGSOFT Workshop on Program Analysis for Software Tools and Engineering (PASTE 2005)*, pages 2-5, Lisbon, Portugal, Sept. 2005.

[C32] Hongyu Zhang, **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "Implementation and Verification of Implicit-Invocation Systems Using Source Transformation." In Proc. of the *5th International Workshop on Source Code Analysis and Manipulation (SCAM 2005)*, pages 87-96, Budapest, Hungary, Sept./Oct. 2005.

[C33] **Jeremy S. Bradbury**, James R. Cordy, Juergen Dingel, Michel Wermelinger. "A Survey of Self Management in Dynamic Software Architecture Specifications", In Proc. of the *1st ACM SIGSOFT Workshop on Self-Managed Systems (WOSS'04)*, pages 28-33, Newport Beach, California, USA, Oct./Nov. 2004.

[C34] Hongyu Zhang, **Jeremy S. Bradbury**, James R. Cordy and Juergen Dingel. "A Transformational Framework for Testing and Model Checking Implicit-Invocation Systems", In Proc. of the *International Workshop on Distributed Event-Based Systems (DEBS'04)*, pages 110-115, Edinburgh, Scotland, UK, May 2004.

[C35] **Jeremy S. Bradbury** and Juergen Dingel. "Evaluating and Improving the Automatic Analysis of Implicit Invocation Systems", In Proc. of the *European Software Engineering Conference and the ACM SIGSOFT Symposium on the Foundations of Software Engineering (ESEC/FSE 2003)*, pages 78-87, Helsinki, Finland, Sept. 2003. Also published in ACM SIGSOFT Software Engineering Notes (28) 5, Sept. 2003.

[C36] Jeffrey S. Shell, **Jeremy S. Bradbury**, Craig B. Knowles, Connor Dickie and Roel Vertegaal. "eyeCOOK: A Gaze and Speech Enabled Attentive Cookbook", In Video Program of the *International Conference on Ubiquitous Computing (UbiComp 2003)*, Seattle, Washington, United States, Oct. 2003.

[C37] **Jeremy S. Bradbury**, Jeffrey S. Shell and Craig B. Knowles. "Hands on Cooking: Towards an Attentive Kitchen", Extended Abstract in Proc. of the *International Conference on Human Factors in Computing Systems (CHI 2003)*, pages 996-997, Fort Lauderdale, Florida, USA, Apr. 2003.

Referred Presentations

[P1] Stacey A. Koornneef, **Jeremy S. Bradbury**, Michael A. Miljanovic. “Run, Llama, Run: A Collaborative Physical and Online Coding Game for Children.” *Proc. of the 53rd ACM Technical Symposium on Computer Science Education (SIGCSE 2022) – Demonstration (Abstract),* Providence, Rhode Island, USA, March 2022, pages 1177.

Dissertations

[D1] **Jeremy S. Bradbury**. "Using Program Mutation for the Empirical Assessment of Fault Detection Techniques: A Comparison of Concurrency Testing and Model Checking", Ph.D. Thesis. Queen's University. June 2007, 151 pp. (*Supervisors:* James R. Cordy, Juergen Dingel)

[D2] **Jeremy S. Bradbury**. "Model Checking Implicit-Invocation Systems: An Approach to the Automatic Analysis of

		Architectural Styles", M.Sc. Thesis. Queen's University. May 2002, 193 pp. (*Supervisor:* Juergen Dingel)
Unpublished Reports	[U1]	**Jeremy S. Bradbury**, Ian Rutherford, Matthew Graves, Jesse Tweedle and Robert Rosebrugh. "User Guide for Graphical Database for Category Theory 3.0 ", Mount Allison University, Feb. 2006., 30 pp.
	[U2]	**Jeremy S. Bradbury**. ”Organizing Definitions and Formalisms of Dynamic Software Architectures”. Technical Report 2004-477, Queen’s University, Mar. 2004, pages 49.
Invited Talks And Panels	[I1]	Invited Panelist: “Fishbowl Panel - The Role of AI in Software Testing”, 17th IEEE International Conference on Software Testing, Verification and Validation (ICST 2024), May 2024.
	[I2]	Invited Speaker, “Perspectives on Generative AI and Education”, the 2023 Ontario Universities Council for eLearning Summer Institute Summer Institute, July 24, 2023.
	[I3]	Invited Panelist: “Top five lessons learned in entertainment games, serious games, and gamification R&D.... is there a ray of sunshine?”, 6th International Workshop on Games and Software Engineering (GAS 2022), May 2022.
	[I4]	Invite Keynote: “Advancing Test Automation Using Artificial Intelligence (AI)”, 4th IEEE Workshop on NEXt level of Test Automation (NEXTA), Apr. 2021.
	[I5]	Invited Panelist: “The Impact of AI and Machine Learning on Quality Assurance”, Toronto Association of Systems and Software Quality (TASSQ) President’s Dinner & 25th Anniversary, Sept. 25, 2018.
	[I6]	Invited Speaker: “Can Commit History Predict Future Code Changes in GitHub Projects”, invited NOVA LINCS Seminar, Universidade Nova de Lisboa, Portugal. June 12, 2018.
	[17]	Invited Speaker: “Automating Software Development Using Artificial Intelligence (AI)”, Computer Science Seminar, Mount Allison University, Canada. Mar. 21, 2018.
	[18]	Invited Speaker: “Automating Software Development Using Artificial Intelligence (AI)”, Computer Science Seminar, Dalhousie University, Canada. Mar. 20, 2018.
	[I9]	Invited Panelist/Speaker: *CASCON 2011 Doctoral Forum*, Nov. 9, 2011.

[I10] Invited Keynote: "Producing High Quality Concurrent Software", *2011 Spring Meeting of the Consortium for Software Engineering Research (CSER)*, Jun. 21, 2011.

[I11] Invited Speaker: *CSER Workshop on the Future Trends of Detection, Evolution, Management and Applications of Code Clones*. Jun. 21, 2011.

Student Supervision – In Progress

PhD Students

- **Stacey Koornneef**, PhD Student, Computer Science, 2024-Present
  Thesis: Tangible Interfaces and Creativity in Computer Science Education

MSc Students

- **Nadia Goralski**, MSc Student, Computer Science, 2020-Present
  Thesis: Using Parsons Problems to Enhance Learning of Web Programming
- **Bridget Green**, MSc Student, Computer Science, 2024-Present
  Thesis: Topics in Software Engineering and Computer Science Education
- **Riddhi More**, MSc Student, Computer Science, 2023-Present
  Thesis: FlakyXbert: Improved Classification of Flaky Tests using Few-Shot Learning
- **André Wemans**, MSc Student, Computer Science, Universidade Nova de Lisboa, 2024-Present
  Thesis: Using AI to Inject Noise in Java Programs
  Co-supervisor: João Lourenço

Undergraduate Students

- **Daniel Hinbest**, Honours Thesis Student (Computer Science), 2024-25
  Thesis: Assessment of Unit Testing Practices in Undergraduate Computer Science Education
  Co-supervisor: Michael Miljanovic
- **Ashar Izhar**, Honours Thesis Student (Computer Science), 2024-25
  Thesis: Improving Student Program Comprehension Through LLM-Based Question Generation
  Co-supervisor: Eric Rapos
- **Bisha Fatima**, Undergraduate Research Student (Computer Science), 2024-25
  Project: Large Language Models (LLMs) and Software Testing
- **Rosie Khurmi**, Undergraduate Research Student (Computer Science), 2024-25

Project: An Educational Computational Thinking Game for K-5 Students

- **Mirisan Ravindran**, Honours Thesis Student (Computer Science), 2024-25
  Thesis: Level Generation in an Educational Software Testing Game
  Co-supervisor: Cristiano Politowski
- **Dev Thaker**, Honours Thesis Student (Computer Science), 2024-25
  Thesis: Measuring Emotion During Programming Activities
  Co-supervisor: Steven Livingstone

Student Supervision – Completed

PhD Students

- **Michael A. Miljanovic**, PhD Candidate (Computer Science), 2015-20
  Thesis: Adaptive Game-based Learning in Computer Science Education.
- **David Kelk**, PhD Candidate (Computer Science), 2010-15
  Thesis: CORE: Concurrent Bug Repair.
  Co-supervisor: Mark Green
- **John Khalil Jacoub**, PhD Candidate (Electrical & Computer Engineering), 2009-14
  Thesis: Software Modelling for Wireless Sensor Networks (WSN).
  Co-supervisor: Ramiro Liscano

MSc Students

- **Stacey Koornneef**, MSc Student, Computer Science, 2021-2024
  Thesis: Topics in K-12 Computer Science Education and Serious Games
  Co-supervisor: Michael Miljanovic
- **Filipe de Luna**, MSc Student, Computer Science, Universidade Nova de Lisboa, 2021-22
  Thesis: Noise-based Testing of Concurrent Java Programs
  Co-supervisor: Joao Lourenco
- **Luisa Rojas Garcia,** MSc Student (Computer Science), 2017-20
  Thesis: CFLASH: Fault Localization in Concurrent Programs.
- **Gabrielle Perez Dias,** MSc Student (Computer Science), 2016-18
  Thesis: Understanding and Recovering from Interruption during Programming Tasks.
  Co-supervisor: Christopher Collins

- **Joseph Heron**, MSc Student (Computer Science), 2014-16
  Thesis: Predicting Evolutionary Software Change in GitHub Repositories.
- **Michael A. Miljanovic**, MSc Student (Computer Science), 2013-15
  Thesis: RoboBUG: A Game-Based Approach to Learning Debugging Techniques.
- **Kevin Jalbert**, MSc Student (Computer Science), 2010-12
  Thesis: Predicting Mutation Score Using Source Code and Test Suite Metrics.
- **Martin Mwebesa**, MSc Student (Computer Science), 2009-11
  Thesis: Identification and Annotation of Concurrency Design Patterns in Java Source Code Using Static Analysis.

Undergraduate Students

- **Japnit Ahuja**, Honours Thesis Student (Computer Science), 2023-24
  Thesis: Snapcode: A Tool to Support Inclusive Mobile Coding Education
  Co-supervisor: Michael Miljanovic
- **Noshen Atashe**, Honours Thesis Student (Computer Science), 2023-24
  Thesis: Using Machine Learning to Detect Cybersecurity Anomalies in Connected Autonomous Vehicles (CAVs)
  Co-supervisor: Randy Fortier
- **Moksh Bhavsar**, Honours Thesis Student (Computer Science), 2023-24
  Thesis: Automatically Triaging Mozilla Bug Reports Using Machine Learning and Natural Language Processing
  Co-supervisor: Heidar (Kourosh) Davoudi
- **Gerhard Matthew Yu**, Honours Thesis Student (Computer Science), 2023-24
  Thesis: Combining Serious Games and Parsons Problems to Support Coding Education
- *Co-supervisor:* Randy Fortier
- **Japnit Ahuja**, Undergraduate Research Student, 2022-2023
  Project: Automatic Educational Content Recommendation for Computer Science Courses
- **Alexander Baxter**, MITACS Globalink Research Intern, Summer 2023
  Project: TesterMiner: An Educational Testing Game
  Co-supervisor: Michael Miljanovic

- **Jeremy Mohammed**, Undergraduate Research Student, 2023
  Project: Adaptive Serious Games
  Co-supervisor: Michael Miljanovic
- **Sylvain Rocchia**, MITACS Globalink Research Intern, Summer 2023
  Project: TesterMiner: An Educational Testing Game
  Co-supervisor: Michael Miljanovic
- **Kevin Romero Rodriguez**, Honours Thesis Student (Computer Science), 2022-23
  Thesis: Automatically Triaging Mozilla Bug Reports
- **Denis Cimic**, BSc Honours Thesis Student (Computer Science), 2022-23
  Thesis: Using Machine Learning to Understand Web Test Fuzzing
- **Michael Loo**, Honours Thesis Student (Computer Science), 2022-23
  Thesis: Using Machine Learning to Detect Cybersecurity Anomalies in Connected Autonomous Vehicles (CAVs)
  Co-supervisor: Ken Pu
- **Riddhi More**, MITACS Globalink Research Intern, Summer 2022
  Project: Learning Concurrency Pitfalls with Serious Games
  Co-supervisor: Michael Miljanovic
- **Niranjan Girhe**, MITACS Globalink Research Intern, Summer 2022
  Project: Learning Concurrency Pitfalls with Serious Games
  Co-supervisor: Michael Miljanovic
- **Julian Finley**, Honours Thesis Student (Computer Science), 2021-22
  Thesis: CATCODERS: An Educational Computer Science Game
  Co-supervisor: Randy Fortier
- **Jeremy Friesen**, Honours Thesis Student (Computer Science), 2021-22
  Thesis: OMPLoopHelper: A Static Analysis Tool to Help Parallelize Sequential C Loops with OpenMP
- **Kashif Hussain**, Honours Thesis Student (Computer Science), 2021-22
  Thesis: PIE: Exploring Design Pattern Life Cycles
- **Michael Loo**, Undergraduate Research Student, Summer 2021
  Project: Using Machine Learning to Detect Cybersecurity Anomalies in Connected Autonomous Vehicles (CAVs)
- **Mario Velazquez**, Honours Thesis Student (Computer Science), 2021-22
  Thesis: Scaffolding Student Learning of Database Programming using Parsons Problems
  Co-supervisor: Michael Miljanovic (University of Toronto, Mississauga)

- **Hannah Yeatman-Michaud**, Undergraduate Research Student, Queen's University, May 2021-Oct. 2021
  Project: A Collaborative Quiz Question Bank for First Year Computer Science Courses (eCampusOntario Virtual Learning Strategy Grant)
  Co-supervisor: Wendy Powley (Queen's University)
- **Naida Tania**, Undergraduate Research Student (Summer 2020)
  Project: Using Machine Learning to Detect Cybersecurity Anomalies in Connected Autonomous Vehicles (CAVs)
- **Taabish Jeshani**, Honours Thesis Student (Computer Science), 2020-21
  Thesis: A Generalized Approach to Parallel Genetic Algorithms on GPUs
- **Stacey Koornneef**, Honours Thesis Student (Computer Science), 2020-21
  Thesis: Developing a Physical and Digital Game to Teach Children to Code
  Co-supervisor: Michael Miljanovic
- **Tilova Shahrin**, Directed Studies Student (Computer Science), Jan. 2021-Apr. 2021
  Project: Block-based Parallel Programming
- **Nadia Goralski**, Honours Thesis Student (Computer Science), 2019-20
  Thesis: vShell: An Academic Chatbot for Slack
  Co-supervisor: Randy Fortier
- **Gavin Gosling**, Honours Thesis Student (Computer Science), 2019-20
  Thesis: Automatic Prediction of Bug Severity in Open Source Projects
- **Onyedikachi Kalu**, Honours Thesis Student (Computer Science), 2019-20
  Thesis: CoachSyntax: A Parsons Problem Game for Learning Programming
- **Ibrahim Mushtaq**, Honours Thesis Student (Computer Science), 2019-20
  Thesis: VulkanEdu: An Educational Framework for Learning Vulkan
  Co-supervisor: Mark Green
- **Jude Arokiam**, Honours Thesis Student (Computer Science), 2018-19
  Thesis: Using Natural Language Processing and Historical Data to Automatically Predict Bug Severity.
- **Devon McGrath**, Honours Thesis Student (Computer Science), 2018-19

Thesis: Automatically Repairing Concurrency Bugs in Java with ARC2.

- **Damon Barton**, Honours Thesis Student (Computer Science), 2017-18
  Thesis: CodeSniffer: A Serious Game for Learning Code Refactoring.
- **Andrei Stoica**, Honours Thesis Student (Computer Science), 2017-18
  Thesis: Identifying Source Code Similarity Using NLP Techniques.
  Co-supervisor: Ken Pu
- **Daniel Hope**, Honours Thesis Student (Computer Science), 2016-17
  Thesis: FireFinder: A Serious Game for Learning Pathfinding Algorithms.
  Co-supervisor: Randy Fortier
- **Luisa Rojas Garcia**, Honours Thesis Student (Computer Science), 2016-17
  Thesis: Learning Concurrency Using Serious Games.
- **Taylor Smith**, Honours Thesis Student (Computer Science), 2016-17
  Thesis: Assessing the Comprehension of Method Chaining in Javascript.
- **Mohamad Vedut**, Undergraduate Research Student (Software Engineering), 2016
  Project: Surveying Automatic Bug Repair Techniques
- **Scott McLean**, TIF Student (Software Engineering), Summer 2016
  Project: Enhancing First Year Programming Labs Using Game-Based Learning.
- **Alexander Marshall**, Honours Thesis Student (Computer Science), 2015-16
  Thesis: A Unit Testing Eclipse Plugin for Multicore Software.
- **Priya Mohan**, Honours Thesis Student (Computer Science), 2015-16
  Thesis: Using Artificial Intelligence to Improve Software Development Techniques.
  Co-supervisor: Jarek Szlichta
- **Blair Wiser**, Honours Thesis Student (Computer Science), 2015-16
  Thesis: Visualization of Mutation Testing.
  Co-supervisor: Christopher Collins
- **Jeremy Kwok,** NSERC USRA Student (Computing Science) Summer 2015
  Project: SyncDebugger: Automatic Debugging of Multicore Software.
- **Joseph Heron,** NSERC USRA Student (Computer Science), Summer 2013; Science Undergraduate Research Award (SUSRA) Student

(Computer Science), Summer 2014
Project: GitView: Visualization of GitHub Visualization of Open Source Code and Comment Churn.

- **Daniel Smullen**, Undergraduate Research Student (Software Engineering), 2013-14
  Project: Topics in Protecting Personal Data in Online Environments.
- **Jonathan Gillett**, Undergraduate Research Student (Software Engineering), 2013-14
  Project: Topics in Protecting Personal Data in Online Environments.
- **Mitchell George**, Undergraduate Research Student (Software Engineering), Summer 2013
  Project: Assessing the Benefits of Mutation with Concurrent Software.
- **David Petras**, Undergraduate Research Student (Software Engineering), 2016
  Project: Visualization of Mutation Testing Data.
- **Mariana Akemi Shimabukuro**, Undergraduate Research Student (Computer Science), 2016
  Project: Studying the Use of Text in Visualizations.
  Co-supervisor: Christopher Collins
- **Adam Contois**. Honours Thesis Student (Computer Science), 2012-13
  Thesis: Analyzing and Visualizing Community Data from Stack Overflow.
- **Jason Hum**. Honours Thesis Student (Computer Science), 2012-13
  Thesis: Exploring the Relationship Between Code and Comment Churn.
- **Ryan Watson**. Honours Thesis Student (Computer Science), 2012-13
  Thesis: Heterogeneous Haptic Computing.
- *Co-supervisor:* Mark Green
- **Shivam Kalra**, UOIT STAR Research Student (Computer Science), Summer 2012
  Project: Fault Localization in Concurrent Java Programs.
- **Rafael Ayala**, Honours Thesis Student (Computer Science), 2011-12
  Thesis: A Mobile Application for Searching Specific Topics on Twitter and Assessing Result Credibility.
- **Jared Hinde**, Honours Thesis Student (Computer Science), 2011-12
  Thesis: Towards an Educational Social Network for Computer Programming Courses.

- **Daniel St. Jacques**, Honours Thesis Student (Computer Science), 2011-12
  Thesis: Open Source Release History Collection and Classification.
- **Benjamin Waters**, Honours Thesis Student (Computer Science), 2011-12
  Thesis: Visualization of Mutation Test Data to Aid in Test Prioritization.
  Co-supervisor: Christopher Collins
- **Cody LeBlanc**, Part-time Research Student (Software Engineering), Summer 2011
  Project: Eclipticon – An Eclipse Plugin for Testing Concurrent Java.
- **Alexander Kidd**, Honours Directed Studies Student (Computer Science), Fall 2011
  Project: Smart Notice Boards.
  Co-supervisor: Faisal Qureshi
- **Gowritharan Maheswara**, Research Student (Computer Science), Summer 2010
  Project: TIE – Thread Interleaving Visualizer.
  Co-supervisor: Chris Collins
- **Alexander Kidd**, Part-time Teaching Innovation Fund (TIF) Summer Student (Computer Science), Summer 2010
  Project: An Online Testing and Evaluation Environment for Computer Programming Courses.
- **Kevin Jalbert**, NSERC USRA Student (Software Engineering), Summer 2010
  Project: Automatic Bug Repair
- **Kevin Jalbert**, Capstone Students (Software Engineering), 2009-10
  Capstone Project: An Eclipse plug-in To Test Different Path Interleavings in Concurrent Java Programs.
  Co-supervisor: Ramiro Liscano
- **Chris Forbes**, Capstone Students (Software Engineering), 2009-10
  Capstone Project: An Eclipse plug-in To Test Different Path Interleavings in Concurrent Java Programs.
  Co-supervisor: Ramiro Liscano
- **Cody LeBlanc**, Capstone Students (Software Engineering), 2009-10
  Capstone Project: An Eclipse plug-in To Test Different Path Interleavings in Concurrent Java Programs.
  Co-supervisor: Ramiro Liscano
- **Lisa Kosh**, Honours Thesis Student (Computer Science), 2009-10
  Thesis: Experiments into the Software Testing Coupling Effect.

- **Kristina Glinos**, Honours Thesis Student (Computer Science) 2009-10
  Thesis: Development of a Concurrency Benchmark for Java.
- **Gowritharan Maheswara**, Honours Thesis Student (Computer Science), 2009-10
  Thesis: Visualization of Thread Interleaving Produced by Java PathFinder.
  Co-supervisor: Christopher Collins
- **Bradley Chicoine**, Honours Thesis Student (Computer Science), 2009-10
  Thesis: Visualization of Class Scheduling at UOIT.
  Co-supervisors: Faisal Qureshi, Christopher Collins
- **Kevin Jalbert**, NSERC USRA Student (Software Engineering) Summer 2009
  Project: Using Clone Detection to Statically Analyze Concurrent Java Programs.
- **Wiktor Starzyk**, TIF Student (Computer Science) Summer 2009
  Project: An Online Testing and Evaluation Environment for Computer Programming Courses.
  Co-supervisor: Faisal Qureshi
- **Jon Elliott**, TIF Student (Computer Science), Summer 2009
  Project: XE: A Secure Laptop Based Examination Environment.
  Co-supervisors: Dhavide Aruliah, Janice Strap, Ken Pu
- **Lisa Kosh**, Education Placement Student (Computer Science), Summer 2009
  Project: An Analysis of Tiki Wiki for Computer Science Education.
- **Devin Kester**, Honours Thesis Student (Computer Science), Fall 2008
  Thesis: A Comparison of Bug Detecting Tools for Concurrent Java Programs.
- **Eric White**, Honours Thesis Student (Computer Science), Fall 2008
  Thesis: Profiling Subversion Repositories.
- **Jeff Falkenham**, NSERC USRA Student (Computer Science) Summer 2008; Science Undergraduate Research Award (SUSRA) Student (Computer Science) Summer 2009
  Project: Graph-Based Visualization of Mutation Test Data.
- **Kristina Glinos**, TIF Students (Computer Science), Summer 2008
  Project: A Linux-based Environment for Undergraduate Computer

Science Education.
Co-supervisors: Mark Green, Ken Pu

- **Bradley Chicoine**, TIF Students (Computer Science), Summer 2008
  Project: A Linux-based Environment for Undergraduate Computer Science Education.
  Co-supervisors: Mark Green, Ken Pu

Research Service

Journal, Conference and Workshop Organization

- **Program Committee Co-Chair**, 2025
  35th Annual International Conference on Computer Science and Software Engineering (CASCON 2025)
- **Program Committee member**, 2025
  Symposium on Software Engineering Technologies & Applications (SETA) at the 49th IEEE Annual International Computer Software and Applications Conference (COMPSAC 2025)
- **General Chair**, 2025
  The 8th International Workshop on Next Level of Test Automation (NEXTA 2025)
- **Program Committee member**, 2025
  20th International Workshop on Mutation Analysis (Mutation 2025)
- **Organizing Committee member**, 2025
  9th International Workshop on Games and Software Engineering (GAS 2025)
- **Program Committee member**, 2025
  Conference on Software Engineering Education and Training (CSEE&T 2025)
- **Program Committee member**, 2024
  Foundations of Applied Software Engineering for Games workshop (FaSE4Games'24)
- **Program Committee member**, 2024
  34th Annual International Conference on Computer Science and Software Engineering (CASCON 2024)
- **Organizing Committee member**, 2024
  The 7th International Workshop on Next Level of Test Automation (NEXTA 2024)

- **Sponsorship Co-Chair**, 2024
  The 17th IEEE International Conference on Software Testing, Verification and Validation (ICST 2024)
- **Program Committee member**, 2024
  8th International Workshop on Games and Software Engineering (GAS 2024)
- **Co-Chair**, 2023
  The Annual Canadian Celebration of Women in Computing (CANCWIC 2023)
- **Program Committee member**, 2023
  The 4th ACM/IEEE International Conference on Automation of Software Test (AST 2023)
- **Organizing Committee member**, 2023
  The 6th International Workshop on Next Level of Test Automation (NEXTA 2023)
- **Program Committee member**, 2023
  7th International Workshop on Games and Software Engineering (GAS 2023)
- **Organizing Committee member**, 2022
  The 5th International Workshop on Next Level of Test Automation (NEXTA 2022)
- **Reviewer**, 2022
  The Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium (SIGCSE 2022)
- **Reviewer**, 2021
  The Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium (SIGCSE 2021)
- **Program Committee member**, 2020
  The 30th Annual International Conference on Computer Science and Software Engineering (CASCON 2020)
- **Program Committee member**, 2020
  The 1st International Workshop on Games for Software Engineering Education and Training (SE-Games 2020)
- **Organizing Committee member**, 2020
  The Workshop on Testing of Configurable and Multi-variant Systems (ToCaMS 2020)
- **Reviewer**, 2020
  The Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium (SIGCSE 2020)

- **Program Committee member**, 2019
  The 29th Annual International Conference on Computer Science and Software Engineering (CASCON 2019)
- **Reviewer**, 2019
  The Special Interest Group on Computer Science Education (SIGCSE) Technical Symposium (SIGCSE 2019)
- **Program Committee member**, 2018
  The 28th Annual International Conference on Computer Science and Software Engineering (CASCON 2018)
- **Program Committee member**, 2018
  The 5th ACM SIGPLAN International Workshop on Artificial Intelligence and Empirical Methods for Software Engineering and Parallel Computing Systems (AI-SEPS 2018)
- **Program Committee member**, **NIER track,** 2017
  The 33rd International Conference on Software Maintenance and Evolution (ICMSE 2017)
- **Program Committee member**, 2017
  The 27th Annual International Conference on Computer Science and Software Engineering (CASCON 2017)
- **Track Chair, Fast Abstracts,** 2016
  The 27th International Symposium on Software Reliability Engineering (ISSRE 2016)
- **Early Research Achievements Track Program Committee member**, 2016
  The 32nd International Conference on Software Maintenance and Evolution (ICMSE)
- **Program Committee member**, 2016
  The 3rd Workshop on Software Engineering for Parallel Systems (SEPS 2016)
- **Program Committee member**, 2016
  The 1st Brazilian Symposium on Systematic and Automated Software Testing (SAST 2016)
- **Track Program Committee member**, 2016
  The Multicore Software Engineering, Performance, Applications, and Tools (MUSEPAT) technical track at the 31st ACM/SIGAPP Symposium on Applied Computing (SAC)
- **Co-organizer,** 2015
  The 2015 Fall Meeting of the Consortium for Software Engineering Research (CSER)

- **Program Committee member**, 2015
  The 2nd Workshop on Software Engineering for Parallel Systems (SEPS 2015)
- **Early Research Achievements Track Program Committee member**, 2015
  The 31st International Conference on Software Maintenance and Evolution (ICMSE)
- **Program Committee member**, 2015
  The 10th International Workshop on Mutation Analysis (Mutation)
- **Track Chair**, 2015
  The Multicore Software Engineering, Performance, Applications, and Tools (MUSEPAT) technical track at the 30th ACM/SIGAPP Symposium on Applied Computing (SAC)
- **Co-chair**, 2014
  The 9th CASCON Workshop on Challenges for Parallel Computing
- **ACM Student Research Competition Program Committee member**, 2014
  The 22nd ACM SIGSOFT International Symposium on the Foundations of Software Engineering (FSE)
- **Program Committee member**, 2014
  The 9th International Workshop on Mutation Analysis (Mutation)
- **Technical Program Committee (TPC) member**, 2014
  The IEEE Canadian Conference on Electrical and Computer Engineering (CCECE)
- **Co-chair**, 2013
  The 8th CASCON Workshop on Challenges for Parallel Computing
- **Program Committee member**, 2013
  The 23rd Annual International Conference on Computer Science and Software Engineering (CASCON)
- **Program Committee member**, 2013
  The 2nd International NSF sponsored Workshop on Realizing Artificial Intelligence Synergies in Software Engineering (RAISE)
- **Program Committee member**, 2013
  The 8th International Workshop on Mutation Analysis (Mutation)
- **Program Committee member**, 2013
  The Testing: Academic and Industrial Conference - Practice and Research Techniques (TAIC PART)

- **Steering Committee member, program committee member**, 2013
  The International Conference on Multicore Software Engineering, Performance, and Tools (MUSEPAT)
- **Program Committee member**, 2012
  NSF Workshop: Planning Future Directions in Artificial Intelligence and Software Engineering (AISE)
- **Program Committee member**, 2012
  The 22nd Annual International Conference on Computer Science and Software Engineering (CASCON)
- **General Chair**, 2012
  The 10th Workshop on Parallel and Distributed Systems: Testing, Analysis, and Debugging (PADTAD)
- **Program Committee member**, 2012
  The 7th International Workshop on Mutation Analysis (Mutation)
- **Guest Editor**, 2012
  Science of Computer Programming Special Issue on Mutation Analysis
- **Co-organizer**, 2011
  The Fall Meeting of the Consortium for Software Engineering Research (CSER)
- **Guest Editor**, 2011
  Information and Software Technology Special Issue on Mutation Testing
- **Program Committee member**, 2011
  The 3rd International Symposium on Search Based Software Engineering (SSBSE)
- **Program Committee member**, 2011
  The 6th International Workshop on Mutation Analysis (Mutation)
- **Co-organizer**, 2010
  The 5th International Workshop on Mutation Analysis (Mutation)
- **Co-organizer**, 2009
  The 4th International Workshop on Mutation Analysis (Mutation)

Journal Referee

During my career I have served as a journal referee for multiple journals including:

- IEEE Transactions on Software Engineering (TSE) Journal
- Information and Software Technology (IST) Journal
- Journal of Systems and Software

- Journal of Software: Practice and Experience
- Software Testing, Verification and Reliability (STVR) Journal
- Science of Computer Programming Journal
- Empirical Software Engineering: An International Journal

University Service

- **Chair**, 2021-22
  Graduate (CGS/OGS) Scholarships Committee
- **Chair**, 2021-23
  Graduate Thesis Awards Selection Committee
- **Chair**, 2021-23
  Graduate Excellence Awards Selection Committee
- **Chair**, 2022-23
  Interdisciplinary Graduate Programs Working Group
- **Member**, Nov 2022
  SGPS Manager Hiring Committee
- **Member**, 2021-23
  Banting University Selection Committee
- **Member**, 2021-22
  Vanier Scholarship Selection Committee
- **Member** (elected), 2020-23
  Academic Council
- **Faculty representative**, 2022-23
  Academic Council Steering Committee
- **Faculty representative**, **2022-23**
  Computer Science Tenure Track Search Committee (X4)
- **Faculty representative**, Fall 2021
  Computer Science Teaching Faculty Search Committee
- **Member**, 2019-21
  Research Ethics Board
- **Faculty representative**, 2020-21
  BSc Computer Science Program Review Committee
- **Faculty representative**, 2020
  Third Year Review Committee, Faculty of Engineering and Applied Science
- **Member**, 2020-21
  Experiential Learning Committee, Faculty of Science

- **Faculty representative**, 2019
  Computer Science Limited Term Faculty Member Hiring Committee,
- **Faculty representative**, 2019-20
  Review Committee, Faculty of Science
- **Member**, 2019-20
  Open Educational Resource Stewards
- **Co-coordinator**, 2019
  Computer Science Seminar Series
- **Faculty sponsor**, 2018-20
  ACM-Women Student Chapter
- **Member**, 2019-20
- ICT/Financial Services Strategic University Partnership (SUP) Working Group
- **Member**, 2019-20
  Automotive/Autotech Strategic University Partnership (SUP) Working Group
- **Faculty representative**, 2018-19
  CRC Search Committee (Applied AI), Faculty of Business and IT
- **Member**, 2018-19
  Computer Science TTT Search Committee, Faculty of Science
- **Coordinator**, 2016-17
  Computer Science Seminar Series
- **Chair**, 2016-17
  Web Committee, Faculty of Science
- **Computer science faculty representative**, 2016, 2017
  Graduate Scholarship Selection Committee
- **Teaching staff representative** (elected), 2015-18
  Board of Governors
- **Teaching staff representative** (elected), 2015-18
  Audit & Finance Committee, Board of Governors
- **Faculty representative**, 2015-16
  Faculty of Science Early Alert Committee
- **Science representative**, 2014-2017
  Computer Science Graduate Program Management Committee
- **Science representative**, 2014-16
  Curriculum and Program Review Committee

- **Member**, 2011-13, 2014-2017, 2020
  Dean's Advisory Committee, Faculty of Science
- **Member**, 2011-13, 2014-16
  Curriculum Committee, Faculty of Science
- **Faculty representative**, 2015
  NSERC USRA Selection Committee, Faculty of Science
- **Faculty representative**, 2014-Present
  Co-operative Education Committee, Faculty of Science
- **Faculty representative**, 2014
  Third Year Review Committee (x2), Faculty of Business & IT
- **Science representative**, 2012-13
  Graduate Committee
- **Academic Council representative**, 2012-13
  Budget Model Steering Committee
- **Member**, 2012
  IT Committee, Faculty Science
- **Member**, 2012
  Teaching Innovation Fund Committee
- **Member**, 2011-12
  Academic Appeals Committee, Faculty of Science
- **Faculty representative**, 2011-13
  Academic Council Executive
- **Faculty at-large representative** (elected), 2009-13
  Academic Council
- **Chair**, 2009-13
  Web Presence Committee, Faculty of Science
- **Member**, 2012
  Information Security Hiring Committee, Faculty of Business & IT
- **Member**, 2011-12
  Software Engineering Hiring Committee, Faculty of Engineering and Applied Science
- **Member**, 2011
  Undergraduate Awards Committee, Faculty of Science
- **Member**, 2011
  CRC II Digital Media Search Committee, Faculty of Social Sciences & Humanities
- **Faculty representative**, 2011
  CMS Vendor Selection Committee, Marketing & Communications

- **Member**, 2010-11
  Software Engineering Hiring Committee, Faculty of Engineering and Applied Science
- **Science poster judge**, 2009, 2011
  Student Research Showcase
- **Faculty representative**, 2010
  Staff Award of Excellence Committee
- **Co-organizer**, 2008, 2009
  Science Student Research Day, Faculty of Science
- **Member,** 2008-09
  Computer Science Graduate Committee
- **Member**, 2007-08
  Computer Science Hiring Committee, Faculty of Science
- **Coach**, 2008, 2009
  ACM Programming Team