Jonathan Eyolfson

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Research Interests

Program analysis, programming languages, systems, and machine learning.

Academic Experience

University of Toronto   **Assistant Professor, Teaching Stream**
Electrical and Computer Engineering   *2022 – Present*

University of California, Los Angeles   **Postdoctoral Fellow**
Computer Science and Engineering   *2018 – 2022*
Advisor: Harry Xu

Education

University of Waterloo   **Ph.D.**
Electrical and Computer Engineering   *2011 – 2018*
Thesis: "Enforcing Abstract Immutability"
Advisor: Patrick Lam

University of Waterloo   **M.A.Sc.**
Electrical and Computer Engineering   *2009 – 2011*
Thesis: "Tracerory - Dynamic Tracematches and Unread Memory Detection for C/C++"
Advisor: Patrick Lam

Queen's University   **B.Sc. (Honours)**
Electrical and Computer Engineering   *2005 – 2009*

Teaching Experience

University of Toronto   **Assistant Professor, Teaching Stream**
Electrical and Computer Engineering   *Fall 2024*
ECE 454: Computer Systems Programming

University of Toronto   **Assistant Professor, Teaching Stream**
Electrical and Computer Engineering   *Winter 2024, Winter 2025*
APS 105: Computer Fundamentals

University of Toronto   **Assistant Professor, Teaching Stream**
Electrical and Computer Engineering   *Winter 2023, Winter 2024, Winter 2025*
ECE 353: Systems Software

University of Toronto   **Assistant Professor, Teaching Stream**
Electrical and Computer Engineering   *Fall 2022, Fall 2023, Fall 2024*
ECE 344: Operating Systems

University of California, Los Angeles   **Lecturer**
Computer Science and Engineering   *Spring 2021, Summer 2021, Fall 2021*
CS 111: Operating System Principles

University of Waterloo   **Instructor**
Electrical and Computer Engineering   *Winter 2012*
ECE 459: Programming for Performance
University-Level Award: Amit & Meena Chakma Award for Exceptional Teaching by a Student

Teaching Awards

Departmental-Level Award: Teaching Award for ECE 344, 2024

Grants and Scholarships

NSERC (PGS D)   *2013 – 2014*
Ontario Graduate Scholarship   *2010*

Refereed Conference Publications

 [1] John Thorpe, Pengzhan Zhao, Jonathan Eyolfson, Yifan Qiao, Zhihao Jia, Minjia Zhang, Ravi Netravali, and Guoqing Harry Xu. "Bamboo: Making Preemptible Instances Resilient for Affordable Training of Large DNNs". In: *20th USENIX Symposium on Networked Systems Design and Implementation (NSDI)*. 2023.

 [2] Chenxi Wang, Haoran Ma, Shi Liu, Yifan Qiao, Jonathan Eyolfson, Christian Navasca, Shan Lu, and Guoqing Harry Xu. "MemLiner: Lining up Tracing and Application for a Far-Memory-Friendly Runtime". In: *16th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. **Jay Lepreau Best Paper Award**. 2022.

 [3] John Thorpe, Yifan Qiao, Jonathan Eyolfson, Shen Teng, Guanzhou Hu, Zhihao Jia, Jinliang Wei, Keval Vora, Ravi Netravali, Miryung Kim, and Guoqing Harry Xu. "Dorylus: Affordable, Scalable, and Accurate GNN Training with Distributed CPU Servers and Serverless Threads". In: *15th USENIX Symposium on Operating Systems Design and Implementation (OSDI)*. 2021.

 [4] Jonathan Eyolfson and Patrick Lam. "How C++ Developers Use Immutability Declarations: an Empirical Study". In: *Proceedings of the 41st International Conference on Software Engineering (ICSE)*. 2019.

 [5] Jonathan Eyolfson and Patrick Lam. "C++ const and Immutability: An Empirical Study of Writes-Through-const". In: *30th European Conference on Object-Oriented Programming (ECOOP)*. 2016.

 [6] Jonathan Eyolfson and Patrick Lam. "Detecting Unread Memory Using Dynamic Binary Translation". In: *Runtime Verification, Third International Conference (RV)*. 2012.

 [7] Jonathan Eyolfson, Lin Tan, and Patrick Lam. "Do Time of Day and Developer Experience Affect Commit Bugginess?" In: *Proceedings of the 8th International Working Conference on Mining Software Repositories (MSR)*. 2011.

Journal Publications

 [8] Jonathan Eyolfson, Lin Tan, and Patrick Lam. "Correlations between Bugginess and Time-Based Commit Characteristics". In: *Empirical Software Engineering* 19.4 (2014).

Reviewing

Reviewer   *Technical Symposium on Computer Science Education (SIGCSE TS) 2024 & 2025*
Reviewer   *Transactions on Software Engineering 2019*
Artifact Evaluation Committee   *ECOOP 2017 & 2018*
Artifact Evaluation Committee   *OOPSLA 2016 & 2017*