Bryant J Curto

Research Interests

concurrent systems, distributed systems, operating systems/kernels, performance analysis, formal verification of concurrent and distributed algorithms.

Education

2020–present **MMath Thesis Computer Science**, *University of Waterloo (UW)*, Waterloo, ON.
95.75/100.00 GPA

2014–2018 **BA Computer Science with Honors & BA Mathematics**, *New York University (NYU)*, New York, NY.
3.921/4.000 GPA, Summa Cum Laude, Phi Beta Kappa

Research Experience

2020–present **UW Graduate Research Assistant**, *Advisor: Martin Karsten.*
Developing an approach for improving cache locality of multithreaded applications by using a user-level M:N threading runtime to enable CPUs to delegate execution.
- Designed and built a microbenchmark to check the reasonableness of the proposed approach.
- Evaluated production applications modified to delegate the execution of I/O operations.
- Creating a tool for automatically determining an application's amenability to delegating execution through memory access characterization.

2017–2018 **NYU Senior Honors Thesis**, *Advisor: Christopher Mitchell.*
Project Title: Ghosting ASLR: A Spectre Extension
Designed, implemented, and evaluated a novel approach for defeating address space layout randomization by leveraging the Spectre microprocessor vulnerability. Won best presentation award at NYU College of Arts and Science's 44th Undergraduate Research Conference.

Summer 2016 **NYU Courant Undergraduate Research Fellow**, *Advisor: Jinyang Li.*
Implemented and evaluated a novel database storage structure to reduce the latency of accesses performed in parallel with database entry migration.

Summer 2015 **NYU Courant Undergraduate Research Fellow**, *Advisor: Chee Yap.*
Designed and implemented a system for testing and visualizing Soft Subdivision Search algorithms in robotic motion planning. System was presented in a publication entitled *Path Planning for Simple Robots using Soft Subdivision Search* for which I was acknowledged.

Industry Experience

2018–2020 **Back-End Research & Development Engineer**, *Geopipe, Inc.*, New York, NY.
- Managed and developed the generation of virtual model products.
- Implemented and tested research algorithms to improve the quality and accuracy of product models. Work was funded by the National Science Foundation's SBIR: Phase II grant.
- First author on paper submitted to the European Conference on Computer Vision 2020 and first inventor on patent application (no. 62985156).
- Supervised the daily work of undergraduate interns.

Summer 2017, Spring 2018	**Back-End Research & Development Assistant**, *Geopipe, Inc.*, New York, NY. ○ Managed and developed the generation of virtual model products. ○ Assisted in the implementation and testing of research algorithms to improve the quality and accuracy of product models. Work was funded by the National Science Foundation's SBIR: Phase I grant.

Teaching Experience

Spring & Fall 2021	**UW Teaching Assistant – CS456 Computer Networks**.
Winter 2021	**UW Teaching Assistant – CS116 Introduction to CS 2**.
Summer 2018	**Private Tutor – Linear Algebra and Computer Science**, New York, NY.

Awards

2020–present	**Graduate Excellence Award in Computer Science**. UW Cheriton School of Computer Science
2020	**University of Waterloo Graduate Scholarship**. UW Cheriton School of Computer Science
2018	**Best in Panel Presentation Award: Computer Science, Mathematics for *Ghosting ASLR: A Spectre Extension***. NYU College of Arts and Science 44th Annual Research Conference
2018	**Award for Scholarship: Academic Excellence & Achievement in Science**. NYU College of Arts and Science
2018	**Computer Science Prize: Outstanding Performance**. NYU College of Arts and Science
2017	**Computer Science Prize: Most Promising Student in the Junior Year**. NYU College of Arts and Science
2017	**Dean's Undergraduate Research Fund Award**. NYU College of Arts and Science
2015–2018	**Louis Baron Scholarship Award for Mathematics**. NYU College of Arts and Science
2014–2018	**Julius Silver/CAS Scholarship**. NYU College of Arts and Science
2014–2017	**Dean's List**. NYU College of Arts and Science

Skills

PLs:	C++, C, Python, Bash
OSes:	Linux, MacOS
Tools:	Vim, Perf, Git, GDB/LLDB, gnuplot, LaTeX