

Patrick Devaney

✉ devaneyp@cs.ubc.ca

🌐 patrickdevaney.net

Citizenship: Canada, Ireland, and United Kingdom

Research Interests

- Theory: algorithms, data structures, complexity
- Discrete Math: combinatorial optimization, computational geometry, graph theory
- Formal Methods: verification of hardware and software, automated theorem proving, SAT for math, formalization of math

Education

- 09/2023 - Present **PhD Computer Science**, *University of British Columbia*, Vancouver, BC
Supervisor: Alan Hu
- 09/2021 - 04/2023 **MSc Computer Science**, *University of Windsor*, Windsor, ON, 93.00%
Thesis: Approximating Average Bounded-Angle Minimum Spanning Trees
Supervisors: Ahmad Biniiaz and Prosenjit Bose
- 09/2016 - 04/2021 **BCS(H) Computer Science**, *University of Windsor*, Windsor, ON, 92.27%
with Great Distinction
Minor in Statistics
- 09/2016 - 04/2021 **BMath(H) Mathematics**, *University of Windsor*, Windsor, ON, 92.27%
with Great Distinction

Experience

Research

- 09/2020 - 04/2021 **Research Assistant**, *University of Windsor*, Windsor, ON
Supervisor: Dr. Ahmad Biniiaz
- Researched reducing the approximation factor in an algorithm for bounded-angle minimum spanning trees as part of research project course
- 01/2019 - 04/2019 **Research Assistant**, *University of Windsor*, Windsor, ON
Supervisor: Dr. Arunita Jaekel
- Worked on vehicular ad-hoc network traffic simulation project using SUMO, Veins, and OMNeT++
- 02/2018 - 07/2018 **Research Assistant**, *University of Windsor*, Windsor, ON
Supervisor: Dr. Sherif Saad
- Worked as part of a group on designing and developing a proof-of-concept ransomware in C# using agile methodology
 - Responsible for file system functionality
 - Attended cybersecurity consultation meetings with industry

Teaching

- 09/2023 - Present **Graduate Teaching Assistant**, *University of British Columbia*, Vancouver, BC
 Graduate teaching assistant for:
- CPSC 221 Basic Data Structures (F23, W25, W26, S26)
 - CPSC 259 Data Structures for Electrical Engineers (F24)
 - CPSC 420 Advanced Algorithm Design and Analysis (W24)
- 09/2021 - 04/2023 **Graduate Teaching Assistant**, *University of Windsor*, Windsor, ON
 Graduate teaching assistant for:
- COMP-3670 Computer Networks (S22)
 - COMP-4540 Design and Analysis of Algorithms (F21, W22, F22, W23)
- 05/2018 - 12/2019 **Teaching Assistant**, *University of Windsor*, Windsor, ON
 Teaching assistant for:
- COMP-1000 Key Concepts in Computer Science (S19)
 - COMP-2097 Social Media and Mobile Technology for End Users (S18)
 - COMP-2310 Theoretical Foundations of Computer Science (F19)

Technical Skills

Primary Programming Languages: C++, C, Python

Prior Experience: Java, Haskell

ACM ICPC

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|-------------|-------------------------------|---|
| 2017 - 2020 | ACM ICPC Regional Competition | <i>Highest-finishing University of Windsor team</i> |
| 2017 - 2020 | ACM ICPC Local Competition | <i>1st of 10+ local teams</i> |

Awards and Scholarships

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|-------------|---|-----------------|
| 2023 | University of Ottawa – Ontario Graduate Scholarship (declined) | <i>\$15,000</i> |
| 2022 - 2023 | NSERC Canada Graduate Scholarship - Master's | <i>\$17,500</i> |
| 2022 | Ontario Graduate Scholarship (declined) | <i>\$15,000</i> |
| 2022 | University of Windsor Departmental Scholarship | <i>\$3,000</i> |
| 2021 - 2023 | University of Windsor Master's Entrance Scholarship | <i>\$12,500</i> |
| 2016 - 2020 | University of Windsor Dean's Renewable Entrance Scholarship | <i>\$10,000</i> |

Service

- 04/2025 - 04/2026 **Vice President, Finance**, *Computer Science Graduate Student Association, University of British Columbia*
- Responsible for overseeing CSGSA budget, and coordinating expenditures and reimbursements with the CS department
- 09/2018 - 08/2019 **Undergraduate Representative**, *Computer Science Council, University of Windsor*
- Responsible for representing undergraduate concerns to the Computer Science departmental council
 - Discussed proposals for new courses and changes to existing courses as part of the undergraduate curriculum committee
 - Involved in the hiring of 3 new tenure-track professors as part of the appointments committee

Publications

Journal Papers

- [1] A. Biniiaz, P. Bose, and P. Devaney, "Approximating average bounded-angle minimum spanning trees," *Computational Geometry*, vol. 128, p. 102172, 2025.