Nick Mertin

Cell: +1 (905) 510–3203
Email: nickmertin@gmail.com
GitHub: nickmertin
GitLab: nickmertin

Employment History

September 2022–Present	**Graduate Teaching Assistant, Department of Electrical and Computer Engineering, Queen's University**—Lab support and marking for ELEC 377: Operating Systems.
March 2021–November 2022	**Software Architecture Consultant, Cotton Candy**—Coordinating the development of a full-stack system with customer-facing and internal user interface and business automation components.
May 2020–April 2022	**Workshops and Resources Tutor, EngLinks**—Running review workshops and creating study resources for a student-run tutoring and exam preparation service.
May 2021–August 2021	**Undergraduate Student Researcher, Queen's Discrete Event Systems Lab, Queen's University**—Working on applying the theory of discrete event systems control to synthesize digital hardware systems with desirable behaviour.
May 2019–August 2019	**Software Developer Intern, Google**—Developing command-line tools and background systems in Go as part of the Stadia SDK.

Education

- **B.A.Sc. in Computer Engineering**, Queen's University; graduated June 2022.

- **Certificate in Law**, Queen's University; graduated June 2022.

Academic Awards

- Queen Elizabeth II Graduate Scholarship in Science and Technology

- 4.10 undergraduate Grade Point Average, on a scale from 0 to 4.3.

- Undergraduate Student Research Award, Natural Sciences and Engineering Research Council of Canada (NSERC).

Key Extracurriculars

- **President (2021–2022), Queen's ECE Club**

  - Managed academic advocacy and community-building activities for the student body.
  - Responsible for the allocation of an endowment donated by students for educational equipment and similar purchases.

- **President (2019–2020) and Co-founder, Queen's VEX U Robotics Team**

  - Led a team of 24 students, managed several technical projects, and acted as a liaison with the league, student government and University.
  - 2020 VEX U 1st place in the *Make It Real CAD Challenge* sponsored by Autodesk.

- **Head Programmer (2017–2018), E-Bots πlons VEX Robotics Team**

  - Led development of and was the primary contributor to the control software for the robot.
  - 2018 VEX Robotics Competition World Champions and Robot Skills World Champions.

Technical Experience and Proficiency

- **C# Programming**—8 years, including networking, LINQ, EntityFramework, ASP.NET, and WPF.

- **C/C++ Programming**—6 years, including advanced features and template metaprogramming.

- **Python Programming**—5 years.

- **Java Programming**—3 years.

- **JavaScript/TypeScript Programming**—3 years, server-side code and Vue.js/React user interfaces.

- **Rust Programming**—2 years, with a focus on embedded systems and zero-cost abstractions.

- **Haskell Programming**—6 months. Familiarity with relevant technical/research papers.

- **Clojure Programming**—1 year. Familiarity with full-stack development, Java interop, and macro development.

- **Embedded Systems**—Developing realtime and interrupt-driven software for microcontrollers in C/C++ and Rust; creating FPGA designs in Verilog.

- **Printed Circuit Board Design**—Designing PCBs with DC-DC switching power converters, STM32 series microcontrollers, and various communication interfaces.

- **Mechanical CAD**—Creating 3D-printable parts and assemblies for competitive robots in Autodesk Inventor.

- **Controls Engineering**—Familiarity with linear control theory and applications, primarily in the context of competitive robotics. Theoretical background in supervisory control of discrete-event dynamical systems.

- **Database Systems**—Design of enterprise software systems using relational SQL databases, primarily MySQL/MariaDB.

- **Technical Writing**—Significant experience writing and editing technical documentation and reports in academic, extracurricular, and industry contexts; competence with LaTeX typesetting.