

# BENJAMIN COX

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## Education

### Queen's University

*B.A.S.c Mechatronics and Robotics Engineering*

Kingston, ON

Sep 2023 – May 2027

- **Relevant Courses:** Microprocessor Interfacing & Embedded Systems, Data Structures & Algorithms, Signals & Systems, Sensors & Actuators, Automatic Controls, Computer Architecture, Thermodynamics, Fluid Mechanics & Fluid Power, Mechatronics & Robotics Design I & II
- **Awards:** Dean's Scholar Distinction, Queen's Engineering Competition Senior Design 1st Place

## Professional Experience

### Dalhousie Yacht Club

*Head Instructor*

St. Catharines, ON

Feb 2025 – Aug 2025

- Overhauled sailing programs, successfully increased registration by 65%
- Increased passing rate to 80% per session by mentoring sailing instructors
- Launched Adult Sailing Program and Instructor in Training program
- Secured \$22,500 worth of donations and received a Certificate of Appreciation from the Navy League Cadets

### Barrie Yacht Club

*Development Coach & Advanced Sailing Instructor*

Barrie, ON

May 2023 – Aug 2024

- Proposed and developed a 29er Development Team in 2023. Organized, budgeted and coached the program in 2024
- Collaborated with a team of 10 instructors and achieved the best year of sailing school in 30 years, resulting in a letter of appreciation from the board of directors
- Led Advanced sailing program to increase passing rate by 100%, through implementation of structured lessons, drills, improved feedback, and clear communication to sailors

## Extracurricular Experience

### Queen's Aerospace Design Team

*Director of Research & Development*

Kingston, ON

May 2025 – May 2026

- Leading 3 managers and 30 members in producing research papers for submission to 3 international conferences
- Expanded research teams from 20 members to 30+ members through selective recruitment
- Consulted with 4 faculty members to help formulate research and conduct experiments

### Queen's Hyperloop Design Team

*Director of Levitation Research & Professional Development*

Kingston, ON

Jun 2025 – May 2026

- Created professional development opportunities for the overall team through workshops and mentoring sessions
- Working to create a small-scaled modular hyperloop levitation system as part of research initiatives

*Research Competition Manager*

Jan 2025 – Jun 2025

- Led a team of 4 to win 1st Place at Hyperloop Global for the design of a hyperloop emergency landing wheel
- Designed a two-layer wheel, performed structural and thermal analysis in SimScale to validate strength and thermal performance. Wrote Python scripts to determine optimal wheel diameter and mounting angle.

## Technical Skills

**Hardware:** Soldering, Circuit Analysis,

**Design:** SolidWorks, Onshape, SimScale, LTSpice

**Programming:** Python, C, C++, HTML, MATLAB, Git, Docker, VHDL, Assembly

**Productivity:** Word, PowerPoint, Excel, Figma

**Languages:** French (Fluent), English (Fluent)