

# Michael Cassidy

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## EDUCATION

### Queen's University

Sept 2022 – May 2027

*Bachelor of Engineering and Applied Sciences, Mechatronics and Robotics*

*Kingston, ON*

- Recipient of Schulich Leader Scholarship valued at \$80 000
- Queen's Engineering Competition - Senior Design - 1st Place
- GPA: 3.83, Dean's Scholar

## PROFESSIONAL EXPERIENCE

### Software Engineer Intern

May – Aug 2023, 2024, 2025

*Teranet*

*Toronto, ON*

- Led development of 12 Java REST APIs in 2024, reducing the average request response times by over a minute for key operations compared to the legacy system, significantly improving efficiency.
- Developed a new integrated application in 2025, cutting response times by over 100ms across all requests by unifying functionality from multiple legacy systems.
- Enhanced codebase maintainability and team collaboration by standardizing design practices and improving readability across applications.
- Recognized by management as a top-performing intern, demonstrating skills on par with established developers and earning the highest performance rating for a co-op student.

### Robotics and Programming Instructor

Jul 2019 - Aug 2023

*RoboEDU*

*Toronto, ON*

- Taught robotics and programming classes to over 300 students from ages 4 to 16, clearly explaining engineering concepts in an engaging and age-appropriate way.
- Coached competitive robotics teams, guiding design, programming, and teamwork with a focus on problem-solving and creativity.
- Developed lesson plans and projects that helped students build practical skills in robotics engineering.

## EXTRACURRICULARS

### Director of Aeromechanics

Apr 2025 - Present

*Queen's Aerospace Design Team*

*Kingston, ON*

- Led a 20-person sub team responsible for the full mechanical design and construction of a fixed-wing aircraft for the AIAA competition, including CAD modeling with OnShape, structural analysis, and manufacturing.
- Oversaw mechanical subsystem designs through regular design review and inter-team meetings to ensure successful design integration.
- Developed aerodynamic models of the aircraft using OpenVSP and a custom Python script for dynamics calculations to optimize stability and efficiency.
- Fabricated the aircraft shell by performing carbon fibre layups with custom 3D-printed moulds.

### President of Technical Operations

Sept 2022 - May 2025

*Queen's VEXU Robotics Team*

*Kingston, ON*

- Led an 80+ person technical team across mechanical, electrical and software subteams.
- Led the mechanical development of four robots over three years including motorized and pneumatic actuators, complex linkages, manipulators and drivetrains in tight spaces.
- Competed at the VEXU Robotics World Championships every year on the team and won VEX AI Skills World Champion and the Build Award at worlds, recognizing durability, reliability, meticulous robot construction.
- Modeled and integrated designs using SOLIDWORKS and OnShape, applied kinematic/dynamic analysis using MATLAB, and tolerance design to meet performance and reliability requirements.
- Fabricated components using 3D-printing, machining, and moulding using a rapid prototyping and testing design philosophy to meet weight, strength, and space constraints.
- Mentored team members on mechanical design, fabrication, and assembly best practices, improving team efficiency and knowledge for future seasons.

## TECHNICAL SKILLS

**Software Skills:** SOLIDWORKS, OnShape, OpenVSP, FEA, Python, MATLAB, C++, Rust, Java, Excel

**Manufacturing Methods:** 3D Printing, Moulding, CNC Machining, Carbon Fibre Layups, Hand and Power Tools