

## Education

### BASc - Mechatronics & Robotics Engineering

Smith Engineering at Queen's University

Graduation Year: 2026

Internship Start: May 2025

**Relevant Coursework:** Data Structures and Algorithms, Computer Architecture, Digital Systems, Mechatronics Design, Linear Algebra, Signals and Systems

**Extracurriculars:** **President** – [Queen's Malayalee Association](#)

**Awards:** Dean's List, Dean's Engineering and Applied Science Award, Scholarships totalling up to **\$10,000**

## Technical Skills

**Programming Languages:** C, C++, Python, JavaScript, TypeScript, CSS, HTML, SQL

**Technologies:** React.js, Next.js, NumPy, Tailwind, Git, Redux, ROS2, Webflow, Jira, Confluence, Miro, OpenCV, SOLIDWORKS, Fusion360

**Databases:** MongoDB, PostgreSQL, Firebase

**Soft Skills:** Agile ([LinkedIn Certified](#)), Analytical, Communicative, Cooperative, Responsible, Relationship Builder ([CliftonStrengths](#))

## Experience

### AI & Technology Intern

May 2024 – August 2024

City of Orillia

- Initialized an AI HelpDesk Bot categorizing IT tickets, trained on **6000+ tickets**.
- Authored and presented **Generative AI** guidelines to City Council; **received approval and completed within 90 days**.
- Consulted with **5 city-wide businesses**, upgrading equipment and optimizing processes.

### Software Developer Intern

January 2024 – August 2024

Evstry

- Developed the [Evstry](#) website connecting CMS, Figma, Webflow, and React, achieving a **30% boost** in consumer engagement.
- Guided a **5-man Agile Team** software interns, accelerating task completion in less time expected.

### Machine Learning Developer

January 2024 – Present

GM-SAE AutoDrive Challenge II

- Engineered a sensor-fusion model using C++ and OpenCV, enhancing **performance 25-fold**.
- Created a script with **OpenAI API** to convert datasets to Microsoft VoTT format.
- Represented Queen's University at the GM-SAE AutoDrive Challenge II Winter Workshop in Michigan.

### Undergraduate Teaching Assistant

January 2024 – April 2024

Queen's University

- Educated and mentored as a TA for APSC 142, focusing on the C programming language.
- Directed and supervised approx. **200 students** through hands-on assignments during weekly lab sessions and office hours.

### Junior IT Analyst

April 2023 – August 2023

JANA Corporation

- Reduced **project planning by 10%** by taking an **Agile** approach, improving development of projects.
- Increased productivity by utilizing tools such as **Jira** and **Confluence** for tasks within projects.

## Technical Projects

### [Autonomous Mobile Robot](#)

Python, C++, ROS2, Arduino

- Led a team to develop an autonomous emergency response robot using **ROS2, Arduino, Python, and C++**, equipped with a thermal camera for heat spot detection.
- Enhanced robot efficiency and safety with **LiDAR-based obstacle avoidance** and a **PID controller**.
- Designed mounts and system architecture for hardware-software integration using **Fusion 360** and **Miro**.
- Implemented **SLAM** using **ROS2** during Summer 2024, improving navigation in complex environments. [Learn More](#)

### [Image Captioning Model Comparison](#)

Flask, React.js, Keras

- Worked with an **Agile team of 6** to create and compare four lightweight encoder-decoder models for image captioning with **Keras**, using a modified pretrained **VGG16 convolutional neural network** to extract image features from the Flickr8k dataset.
- Created an interactive website using a **React.js frontend** and **Flask backend** to demonstrate the four models, as well as their bidirectional variants, at the **Canadian Undergraduate Conference on AI (CUCAI)**
- Co-authored and **published a research paper** for CUCAI which analyzes the experiment's findings. [Learn More](#)

### [Store Website: Spice Mart - Barrie](#)

Tailwind CSS, Next.js, MongoDB

- Programmed a website using **Next.js** and **Tailwind**, resulting in a **40% increase** in potential consumers.
- Streamlined menu management by integrating a **RESTful API**, resulting in a **50% reduction** in time spent on menu updates.
- Built a portal for administrators by utilizing **Auth0**, enabling secure **CRUD operations** and data management.
- Implemented **MongoDB Atlas** as the backend database solution, ensuring efficient storage and management of all menu items. [Learn More](#)