

# Grant Achuzia

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## EDUCATION

### Carleton University

Bachelor of Engineering in Computer Systems Engineering

Expected May 2026

Ottawa, Ontario

## EXPERIENCE

### Maintenance Drone Co.

Software Engineer Intern

May 2024 – Present

Ottawa, Ontario

- Developed a Python tool to generate drone flight plans by converting KML/XML longitude and latitude coordinate files into waypoints using Shapely.
- Automated the creation of flight paths, adjusting angles, altitudes, and spacing between waypoints for optimized drone performance.
- Utilized Matplotlib to visualize roof section boundaries and waypoints, improving debugging and accuracy capabilities.
- Implemented a grid-based downsampling algorithm in Python to reduce data density by selecting points closest to grid cell centers, utilizing NumPy for spatial calculations.

### Roof Maintenance Solutions

Software Developer Intern

July 2023 – Aug 2023

Ottawa, Ontario

- Designed a Python class to optimize the import/export of annotation data for a report generator, ensuring data integrity throughout the process.
- Built error detection algorithms using regex to identify and resolve annotation inconsistencies in survey XML data, enhancing report reliability.
- Established a folder management system to streamline user annotation and verification.

## PROJECTS

### Fire Alarm Notification System

3rd Year Engineering Project | Python, JavaScript, HTML/CSS

Jan 2024 – May 2024

Ottawa, Ontario

- Composed a user interface for live monitoring and customization of a fire alarm system using Python, JavaScript, and Flask.
- Modelled a buzzer component to the system using a Raspberry Pi Pico, using MicroPython to integrate buzzing and LED notifications with real-time Firebase database monitoring.
- Configured sensor sensitivity and alarm triggers in a Raspberry Pi 4 component to optimize the system's responsiveness in detecting smoke and temperature changes.

### Elevator Simulator

3rd Year Engineering Project | Java

Jan 2024 – May 2024

Ottawa, Ontario

- Implemented JUnit test classes and managed the testdata.txt file for validating the functionality of elevator-related classes and ensuring system reliability.
- Enhanced the Elevator Simulator's testing suite and state machine logic across 5 iterations, including updates to the elevator, floor, and scheduler subsystems.

## ACTIVITIES

### Canadian Engineering Competition (National Programming Category)

Bronze Medalists | Python, JavaScript, HTML/CSS

Mar 2024

Ottawa, Ontario

- Contributed to creating a program for optimal resource extraction paths for drill rigs, simulating resource distribution on a 100x100 grid with data from a CSV file, and applying a modified A\* algorithm to ensure environmental preservation.
- Built the user interface using HTML, CSS, and JavaScript to enable non-programmers to interact with the simulations

## TECHNICAL SKILLS

**Languages:** Python, C, SQL, Java, JavaScript, HTML/CSS, C++

**Technologies:** Git, MySQL, React, Docker, Flask, Linux, LaTeX, Raspberry Pi, Firebase

**Concepts:** Data Structures and Algorithms, Operating Systems, Machine Learning, Agile Methodology