Elias Coumin

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EDUCATION

University of Ottawa · Ottawa, ON
BASc in Computer Engineering (CO-OP) · *Sep. 2023 – Apr. 2028*

Relevant Courses: Software Engineering, Analysis of User Interface, Computer Architecture I, Operating Systems, Data Structures and Algorithms, Software Responsibility and Ethics, Software Quality Assurance

EXPERIENCE

Engineering Co-op Student (AI Systems) · Jan. 2025 – May 2025
Department of National Defence (Qii.ai) · *Gatineau, QC*

- Collaborated with AI scientists and engineers to enhance an AI algorithm for detecting corrosion on marine vessels.
- Improved model performance by refining labeled datasets and providing ship-specific annotations.
- Worked closely with a startup (Qii.ai) to optimize defect tracking accuracy in real-world naval environments.
- Developed a VBA-based form in Excel that automated defect report generation and email creation for bug reporting to the support team.
- Implemented conditional logic within the form to dynamically customize report contents based on user input.
- Used Power BI and Python to visualize the performance improvement of the corrosion detection model, showing a 50–60% increase in processing speed.

PROJECTS

Head-Controlled Camera for Vlogging | *Custom Microcontroller, C, Python, I2C* · 2024

- Collaborated as part of a 5-person team to design an assistive vlogging device for a client with quadriplegia.
- Designed and built a custom microcontroller programmed in C to interpret head-array input signals.
- Controlled directional servo motors to pan the mounted camera based on head position and button triggers.
- Used I2C protocol to interface between two microcontrollers managing head-array input and camera actuation.
- Integrated Python scripts for interpreting and monitoring user input.

Event Management System | *Java, Firebase* · 2023

- Developed a Java-based platform for event tracking and user registration using Firebase as backend storage.
- Built and styled the UI/UX experience with attention to usability and visual clarity.
- Implemented user authentication, event CRUD functionality, and real-time updates dashboard.
- Performed QA testing with unit test cases to ensure reliability and smooth performance across use cases.

TECHNICAL SKILLS

Languages: Java, Python, C, C++, Assembly, JavaScript, HTML/CSS
Frameworks & Tools: Node.js, Bootstrap, Tailwind, Firebase, Arduino
ML & Libraries: scikit-learn, PyTorch, TensorFlow, Matplotlib
Developer Tools: Git, VS Code, IntelliJ, PyCharm
Concepts: Digital Logic, Computer Architecture