RICHARD AUGUSTINE

Mechatronics and Artificial Intelligence Systems Engineering Student at Western University

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EDUCATION

Bachelor of Engineering Science (BESc.) Sept 2022 — Apr 2026
University of Western Ontario

- Mechatronics Systems and Artificial Intelligence Engineering (BESc. Dual Degree)
- Dean's Honor List (2022, 2023, 2024)

PROJECTS

Autonomous Scavenger Robot Jan 2025 — Mar 2025
Project Developer | Introduction to Mechatronic Design (Course Project)

- Prototyped an autonomous robot in C++ that utilizes sensors to retrieve valuable objects from hazardous environments.
- Designed SolidWorks models and engineering drawings by interpreting PCB schematics and component datasheets.
- Assembled and hand-soldered an ESP32-based PCB that passed initial electrical tests without rework.
- Diagnosed hardware issues using a multimeter and oscilloscope; created a checklist used by peers to simplify debugging.
- Tracked build progress in Excel and reported weekly via PowerPoint to ensure milestones were consistently met.

AI Music Composer Sept 2024 — Mar 2025
Student Innovation Project Director | Western Cyber Society (Club)

- Developed a generative AI model in Python using TensorFlow and NumPy to compose original music from MIDI data.
- Directed a 9-member team, managing development through Git version control to maintain code quality and progress.
- Built a custom preprocessing script to convert 5,000+ note sequences, pitches, and rhythm patterns into input vectors.
- Reduced inference latency from 50s to 30s via model tuning, allowing closer representation of real-time music generation.
- Composed a technical report and presented architecture, dataset design, and results at a Toronto AI conference using Microsoft Word and PowerPoint.

Inhaler Counter Jan 2023 — Apr 2023
Product Developer | ES1050 Foundations of Engineering Practice (Course Project)

- Built an assistive device in C++ using Arduino and sensors to track inhaler usage for vision-impaired users.
- Modeled and printed a functional enclosure in SolidWorks, integrating electronics with mechanical components.
- Showcased at a 150+ entry design competition, winning "Most Popular Project" for usability and innovation.
- Utilized written communication skills to develop a report tailored for non-technical clients, ensuring a clear understanding of the project's goals, implementation, and evaluation.

WORK EXPERIENCE

Guest Service Server May 2024 — Present
The Rec Room

- Serving up to 10+ tables at once through effective time management, reducing wait times and ensuring timely service.
- Utilizing problem-solving skills to resolve on-the-spot customer issues, resulting in high guest satisfaction.
- Demonstrating flexibility by covering other service roles as needed, ensuring smooth operations during peak hours and improving team productivity.

SKILLS

Languages: Python, Java, JavaScript, C/C++, Bash, SQL, Git, Docker, React.js, HTML, CSS, TypeScript, Jupyter Notebook, COBOL, Google Cloud API Suite

Software: pytest, PyTorch, AutoCAD, SolidWorks [Associate (CSWA) & Simulation (CSWA-S) Certifications], MATLAB, MySQL, Git, Microsoft Office (Word, Powerpoint, Excel), Google Cloud Platform

AI/ML: TensorFlow, Scikit-learn, OpenAI API, Pandas, NumPy, Neural Networks, Computer Vision, Model Evaluation, Data Preprocessing

Hardware: Intermediate in Arduino, ESP-32, Basic FDM 3D Printing, Basic Machining, Proficient in Soldering, and Raspberry Pi