

Connor Sequeira

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Mechatronics Engineering student focused on robotics, automation, embedded systems, and intelligent inspection workflows.

EDUCATION

BASc Mechatronics Engineering | University of Waterloo - Waterloo, ON

Expected 2028

Minor in Artificial Intelligence

TECHNICAL SKILLS

Programming: C++, Python, JavaScript, HTML/CSS, Git/GitHub

AI & Robotics Software: PyTorch, ROS2, OpenCV, model-training workflow, computer vision, robot logic/flow

Embedded & Hardware: Arduino, sensor integration, microcontrollers, I/O control, PLC exposure, circuit analysis

Design & Prototyping: SolidWorks, AutoCAD, 3D printing, SimScale/FEA, mechanical design, rapid prototyping

PROFESSIONAL EXPERIENCE

Robotics & Automation Co-op / Engineering Analyst | A. Berger Precision - Brampton, ON

Sep 2024 - May 2026

3 co-op terms, 12 months total: Sep-Dec 2024, May-Aug 2025, Jan-May 2026

- Developed/debugged UR5e pick-and-place logic, reducing cycle time from 21.3s to 6.7s through motion tuning and sequence optimization.
- Supported programming, training, configuration, and validation of an AI vision inspection system, including image capture setup, model-training iterations, threshold tuning, and pass/fail testing.
- Constructed Mech-Mind 3D camera workflows and robot-vision integration logic to improve pick reliability and reduce part mispicks during operation.
- Assisted FANUC CRX-5iA robot cell setup for AI-powered inspection, including robot motion, safety-device integration, and inspection workflow testing.
- Designed SolidWorks parts, tooling, and 3D-printed prototypes; used simulation/FEA where useful to improve durability and support production fixes.
- Created documentation, flowcharts, and troubleshooting guides to improve robot-cell maintainability and reduce operator knowledge gaps.

Engineering Assistant | Armacell Canada, Brampton, ON

Jan 2024 - Apr 2024

- Designed a SolidWorks printer mount for product-traceability needs while accounting for operating space, safety, and installation constraints.
- Prepared cost-benefit analysis, risk assessment, and technical report for a proposed solution to leaking blender machines.

SELECTED PROJECTS

ROS2 Object Tracking System | 2026 | [ROS2](#), [Python](#), [OpenCV](#), [robotics software](#)

- Built a ROS2 perception project using camera input, object-detection logic, and node-based communication to publish tracking information for a robotics workflow.
- Documented node structure, topic flow, setup commands, and demo results for GitHub and portfolio presentation.

PyTorch Digit Recognition Classifier | 2026 | [Python](#), [PyTorch](#), [machine learning](#), [model training](#)

- Trained and evaluated a neural-network classifier for handwritten digit recognition, including dataset loading, training loop, validation metrics, and inference script.
- Saved the trained model and created an inference script to test predictions on unseen handwritten digit inputs.

Arduino Smart Sensor System | 2026 | [Arduino](#), [C++](#), [sensors](#), [embedded systems](#)

- Built an Arduino-based sensor system with C++ control logic, real-time input processing, output actuation, wiring documentation, and testing notes.
- Created wiring documentation and testing notes showing sensor calibration, input behavior, and output response.

TRON Haptics | 2025 | [C](#), [Python](#), [IMU integration](#), [motor control](#), [3D printing](#)

- Developed a wearable haptic glove that dynamically adjusts resistance to simulate touch sensations in virtual environments.

PrecisionMOTION Robotic Hand | 2024 | [C++](#), [Python](#), [OpenCV](#), [embedded systems](#), [SolidWorks](#)

- Created a functioning replica hand that mimics user inputs by combining mechanical design, prototyping, embedded control, and software integration.

AUTOlathe | 2023 | [RobotC](#), [SolidWorks](#), [sensors](#), [servos](#), [mechanical design](#)

- Designed a model lathe that follows user-drawn profiles using mechanical design, sensor feedback, and servo-based actuation.