

Clive Fellows

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EDUCATION

University Of Toronto

Toronto, ON

Bachelor's of Applied Science

September 2021 — April 2026

- 4th year Mechanical Engineering + Mechatronics Minor + Engineering Business Certificate

WORK EXPERIENCE

Independant Consultant

May 2025 — Present

Aston Dynamics Canada LTD

Toronto, ON

- Own firmware development and FCC certification process for our controller, actuator, and hand-held remote.
- Direct mobile app development while building native iOS/Android library providing high-level API for actuator control, abstracting BLE protocols and state management
- Develop automated testing harness used in actuator assembly to enable correlation of field issues with test results
- Design data pipeline architecture from embedded sensors to cloud and company servers

Testing & Development Intern

May 2024 — May 2025

Aston Dynamics Canada LTD

Toronto, ON

- Led firmware development for trailer brake controller using embedded Rust and ESP-IDF, coordinating with electrical and control systems teams and guiding mobile app UX design
- Designed and implemented BLE streaming protocol for OTA updates with webserver backend (Rust Axum, React, Docker)
- Developed wireless real-time sensor logging for field testing using C and ESP-IDF framework on ESP32s
- Initiated and pursued FCC & BLE certification for wireless projects

Innovation Management Intern

May 2023 — Aug 2023

CN Rail

Toronto, ON

- Developed Electron desktop app for parsing wearable safety program logs and analyzing yard incident conditions
- Coordinated with external team on feature implementation for Samsung watch safety app

PROJECTS

Maze Rover (MIE444 Course Project)

Sep 2025 — Dec 2025

Autonomous rover with LIDAR-based localization and sensor fusion for maze navigation.

- Implemented LIDAR-based localization with DFT, kernel matching, and Kalman filtering
- Developed embedded control system using OS threads for I/O and computation, with Rust async runtime for control logic
- Achieved fastest and most reliable autonomous navigation in course using A* path planning and proportional control

CollabCAD

Nov 2023 — Present

Cloud-based sync software for sharing large binary files (e.g., CAD).

- Built desktop app (Dioxus/Rust) and website (React/Rust Axum) with RESTful API for file synchronization

EXTRACURRICULAR ACTIVITIES

University Of Toronto Formula SAE Racing (UTFR)

Sep 2022 — Present

Student engineering team developing a formula-style electric racing car for SAE international competitions.

- Designed, manufactured, and installed custom parts for the car's braking system.
- Developing a wireless telemetry system with BLE Coded PHY and ESP32C6.

SKILLS

- **Programming Languages:** Rust, JavaScript/Typescript, HTML/CSS, C/C++, Python, MATLAB, C#
- **Frameworks & Technologies:** Git, Linux, Docker, ESP-IDF, React, Axum, Traefik, Arduino, STM32Cube
- **Embedded Systems:** Bare-metal development, hardware interfacing, real-time constraints, communication protocols (BLE, CAN, SPI, I2C)
- **Methodologies:** Test-Driven Development (TDD), Behaviour Driven Development (BDD), Unit Testing (Cargo test framework, Tokio async testing)