

Technical Skills

Software

- 5 years experience with **C++**
- **Software Architecture**
- **Git** and GitHub
- 4 years experience with Robot Operating System (**ROS 1+2**)
- 4 years experience with **Linux**
- Intermediate proficiency with **Python**.
- Test Driven Development (Catch2, Unity)
- Human Machine Interfaces
- Data acquisition and analysis
- **Lidar, IMU, RGBD cameras, GNSS** and other common robotics sensors.

Embedded / Firmware

- 16 months on-the-job experience with **STM32** (ST's HAL with/without cubeMX).
- Hobby experience with ESP32 and Teensy microcontrollers (ESP-IDF, and Arduino).
- ZephyrRTOS and **FreeRTOS (CMSIS v2)**
- Experience with **CAN**, UART, I2C, **SPI**.
- Basic experience with **FPGAs**. (VHDL)
- Intermediate experience with **PLCs** (Beckhoff)
- Basic experience with **PCBs** (KiCAD)
- Experience with Google's **Protobuf**
- Proficient with tools commonly used for mechanical and electrical **prototyping**.

Supporting Skills

- **Project management**, with a focus on robotics projects
- Workshop management
- Proficient in mechanical **CAD** (FreeCAD)
- Basic experience in materials
- Practical understanding of manufacturing methods.
- **Pyrotechnic** systems
- **Propulsion** systems
- **Test engineer** workflow
- Dev ops experience

Work Experience

Mytra - San Fransisco, CA (mytra.ai)

May 2025 - Dec 2025

8 months, **Robotics** Intern. (Automated Handling, Storage and Retrieval Robotics).

- Developed firmware for a rapidly changing project with test driven development using modern C++ standards while proposing and implementing large refactors when needed.
- Implemented and monitored alarms to predict hardware failures by detecting patterns in sensor data. Resulting in the identification and mitigation of a major hardware issue.
- Implemented safety-critical systems using Beckhoff PLCs to separately detect forklifts and humans, ensuring our project was safe for our users, engineers and technicians.
- Validated, tested and recommended new technology during a major hardware iteration so the next generation of product better meets the company's goals.

Moon and Mars Industries - Vancouver, BC ([linkedin](https://linkedin.com))

Jan 2024 - Aug 2024

8 months, **Avionics** Intern (Suborbital Rocket Development)

- Developed C++ firmware for communication, automated sequences and ignition detection for a suborbital rocket.
- Developed control room software, including data acquisition, human machine interface, and TCP-based communication.
- Operated engine test stand, relaying critical information to other engineers and recovering from unexpected errors.
- Helped write grant funding applications and presented on potential paths for the company.

Other Experience

UBC Rover - Vancouver, BC (ubcrover.com)

Sep 2021 - Present

Software Lead as of August 2022

- Co-leading a subteam of 10 people to develop software, firmware, and radio communications for a mock planetary rover.
- Developed firmware and integrated implemented inverse kinematics for our 6-DOF arm. Arm's control loop is run at 100Hz.
- **Reorganize team priorities** when needed to keep the project going and ensure critical requirements and deliverables are met.
- Developing robotic simulation based on Unity, transitioning from Gazebo - for training machine learning models.

UBC Rocket - Vancouver, BC

Sep 2021 - Apr 2022

Recovery Systems member

- Researched and developed pyrotechnic parachute release mechanisms.

Awards

UBC Schulich Leader Scholarship

2021