

# Jack Polloway

[LinkedIn](#) | [GitHub](#) | 604-363-8973 | jack\_polloway@icloud.com

## EDUCATION

---

### Bachelor of Applied Science, Engineering Physics

University of British Columbia

Vancouver, Canada

09/2023 - 04/2028

- Specialization: Software Engineering
- Relevant courses: CPEN 221 (Software Construction), ELEC 204 (Linear Circuits)

## SKILLS

---

- **Embedded Programming:** C++, C (STM32 & Arduino), Python, Java
- **Tools:** Git, CAN bus, HIL, SIL, CAD, Vector CANalyzer, Oscilloscopes, 3D printing, waterjet cutting, soldering
- **Numerical Analysis:** MATLAB, SciPy, and NumPy

## EXPERIENCE

---

### Software Engineer, Battery Management System

UBC Formula Electric, Engineering Design Team

Vancouver, Canada

09/2024 - Present

- Collaborated on a multidisciplinary team to develop control algorithms for an electric race car, competing in the Formula SAE Electric competition.
- Designed and programmed a 'diagnostics mode' for the BMS, enabling detailed voltage data transmission from every battery cell for troubleshooting, enhancing the previous system that only monitored min/max voltages.
- Collaborated with electrical and mechanical engineers to integrate the BMS with the overall vehicle control system, improving real-time data communication and diagnostics.
- Utilized embedded C/C++ for low-level programming of STM microcontrollers within the BMS architecture.
- Tech Utilized: Git, GitHub, C++, C, Microsoft Office, CAN bus, SIL, HIL, HAL

### Mechanical Engineer, Powertrain

UBC Supermileage, Engineering Design Team

Vancouver, Canada

09/2023 – 09/2024

- Contributed to the design and performance optimization of hyper-efficient vehicles. Secured 5th place in its category with our Gasoline Prototype vehicle in the Shell Eco Marathon Americas 2024.
- Designed a battery case CAD model in SolidWorks for a vehicle battery, ensuring compliance with competition safety regulations and creating a user-friendly latch-able lid.
- Tech Utilized: CAD, SolidWorks, Microsoft Office, 3D printing

## PROJECTS

---

### Image Processing and Algorithm Development

University of British Columbia

Vancouver, Canada

2024

- Developed algorithms for green-screen replacement and text alignment using Java and Discrete Fourier Transforms.
- Ensured high code coverage (90%+) with unit tests using IntelliJ IDEA and Gradle.
- Followed industry-standard coding practices to ensure maintainable and scalable codebases.
- Tech Utilized: Git, GitHub, Java, IntelliJ IDEA, Gradle, Junit

### Automated Multi-Purpose Robotic Claw

University of British Columbia

Vancouver, Canada

2024

- Designed and programmed an Arduino-based robotic claw for autonomous object handling.
- Achieved 1<sup>st</sup> place in class for performance.
- Tech Utilized: Soldering, C, Git, GitHub, SolidWorks

### Battery-Powered Vehicle

Carson Graham Secondary

North Vancouver, Canada

2023

- Engineered a system for a battery powered go-cart, achieving speeds upwards of 30 km/h.
- Optimized drivetrain gear ratios to ensure optimal torque and top-speed performance.
- Constructed a chassis to meet design parameters.
- Tech Utilized: Welding, Soldering, PowerPoint