

# Cole Fuerth – Embedded Linux & AI

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## EXPERIENCE

### Stealth Startup

#### Embedded Linux Software Engineer

January 2025 – Present  
Marina Del Rey, CA

- Develop embedded Linux on ARM for miniaturized robotics.
- Made BMS firmware with a custom bootloader, low-power sleeping, fast charging, telemetry, and safety features.
- Design and implement distributed systems using a PubSub architecture with **C++** and **Rust**, focusing on low-latency communication and fault-tolerant system design.
- FreeRTOS on embedded controllers, offering snappy response times from a low power CPU.
- I did the bootloaders on everything we've released!

### Satcom Direct Avionics

#### Embedded Linux Software Developer

August 2023 – January 2025  
Ottawa, ON

- Streamlined over-the-air firmware updates on ARM hardware running **OpenWRT** and **U-Boot**.
- Developed **QEMU**-based hardware emulation tools with **C** and **Python**, allowing for rapid testing and validation of avionics software without the need for expensive hardware.

### BMSLabs Windsor

#### Battery Management System Firmware Engineer

Jan. 2022 – Apr. 2023  
Windsor, ON

- Built AI-powered SOC estimation systems using **Python** and **TensorFlow**, achieving 2% error margin accuracy using consumer-grade components instead of precision hardware.
- Designed and assembled automated test fixtures for thermal and SOC validation, enabling continuous validation of battery management algorithms.

### Smyth Innovations

#### Embedded Electronics Engineer

November 2021 – July 2022  
Chatham, ON

- Developed a custom ECU for an RD400 motorcycle using **EasyEDA** for board design, and **C++** for software development. Custom wiring and PCB assembly done by hand.

## PROJECTS

### Electric Long-boards

- Built electric longboards for city transportation with iterative design improvements through testing and refinement, achieving 40kph top speed and 35km range.
- Designed custom electronics with VESC firmware integration, hand-assembled battery packs using 21700 lithium cells, and 3D printed waterproof enclosures for urban durability.

### Electric Motorcycle

- Designed and built a fully electric dirt-bike conversion for engineering capstone, overcoming challenges in high-voltage safety, thermal management, and real-time control systems.
- Implemented custom control system using **Arduino Mega** and **C++**, featuring touchscreen HMI, isolated I/O modules, custom power distribution PCB, and precision analog sensing for battery monitoring and motor control.

## EDUCATION

### University of Windsor

#### BSc[H] Computer Science with AI Specialization | Minor in Mathematics | 3.9 GPA

September 2020 - April 2023  
Windsor, ON

- Computer Science Teaching Assistant; Electrical Engineering Research Assistant; Tutored anything CS or EE related
- Won first place at CSGames 2023 for Emulators and WinHacks 2021 for Hardware.

### St. Clair College

#### Electronics Engineering Technology, Associate Degree | 3.9 GPA

September 2017 - April 2020  
Windsor, ON