ANDREW FISCHER

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Summary

Fourth-year Electrical and Computer Engineering student with hands-on experience in embedded systems and hardware development. Three years of academic and professional experience in C/C++ programming, mixed-signal circuit design, PCB layout, assembly, and hardware debugging.

Skills

Embedded Systems: Arduino (AVR), STM32 (ARM Cortex-M), Raspberry Pi Pico (RP2040, ARM Cortex-M0+)
Interfaces: CAN, UART, USB, SPI, I2C; RTOS: FreeRTOS
Languages & Tools: C, C++, Python, MATLAB, Lua, VHDL, CMake, Git
Design Software: KiCAD, Altium, AutoCAD, LTspice
Lab Equipment: Logic Analyzer, Oscilloscope, Digital Multimeter, Signal Generator
Qualifications: Licensed Amateur Radio Operator - Basic and Advanced (Honours)

Technical Projects

Supercapacitor Bike

- Designed a complete embedded system to drive a modified BLDC motor.
- Developed lightweight, high-performance ATmega328P firmware, including I2C, SPI, EEPROM, Timer & PWM drivers using C and AVR-ASM.
- Designed a dynamic ring buffer to reduce memory overhead and manage bus-busy I2C requests.
- See project [here](#).

Work Experience

Electrical Engineer (Internship) JAN. 2025 – AUG. 2025 (8 MO)
ContainerWest Richmond, BC

- Independently designed, assembled and documented a working TRL-6 expandable annunciator panel, enabling firefighters to interact with the system to simulate events; implemented mixed-signal PCB design in KiCAD and embedded firmware in C++.
- Developed ladder logic programs for OMRON NX1P2 PLCs to automate tasks and monitor live fire burn props to ensure safe operation.
- Gained practical hands-on experience with high-power equipment, including 3-phase AC induction motors, incinomites, and transformers.
- Collaborated with tradespeople and electricians, providing technical guidance and support for installations and troubleshooting.
- Developed ENEFEN-approved system flow graphs and electrical schematics in AutoCAD and performed the associated on-site installations and control system modifications.
- Performed independent site visits and troubleshooting, working directly with clients to ensure reliable and safe operation of the live fire burn props.

Education

University of Victoria Bachelor of Electrical Engineering, 4th year (CGPA : 3.7/4.0)