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OBJECTIVE

Mechatronics Engineering student and IEEE Student Branch Secretary seeking a Winter 4 to 8 month co-op in embedded systems. Brings hands-on experience with firmware development, hardware design and validation, instrumentation, and troubleshooting, with a strong commitment to safety, quality, and continuous learning.

TECHNICAL SKILLS

Testing & Debugging: Oscilloscope, logic analyzer, multimeter, signal generator, bench testing, circuit and software debugging

Hardware & Circuit Design: Schematic/datasheet interpretation, PCB layout, assembly, and soldering

Programming & Tools: C/C++, Python, MATLAB, **Git**, Bash, Verilog

Embedded Systems: Bare-metal programming, HAL development, debugging, protocol implementation, interrupt handling

EDUCATION

Bachelor of Engineering - Mechatronics Co-op *April 2027 (Expected)*
Humber Polytechnic, Etobicoke, ON

- Consistently achieved Dean's Honour List since first semester
- **Highlighted Courses**: Parallel Programming, Digital Electronics, Electric Circuit Analysis, Control Systems, Microcontrollers, Instrumentation and measurement.

WORK EXPERIENCE

Advanced Manufacturing Assistant | *Kal-Polymer, Mississauga, ON* Sept – Dec 2025

- Supporting the implementation of a **5S workplace organization system** to improve efficiency and inventory accuracy.
- **Sorting, tagging, and cataloguing** mechanical/electrical components for integration into the company's **ERP system**.
- Collaborating with engineers and technicians to carry out ongoing process improvements.

Printer Operator | *RMAC Surgical Inc., Etobicoke, ON* Oct 2023 – Jun 2024

- Troubleshot printer and quality issues in a production environment
- Performed peel tests, alignment checks, and filled out QA documentation

PROJECTS

STM32 Embedded Driver Development May – Jul 2025

- Developed bare-metal hardware abstraction layer for **STM32F407** I2C, GPIO, SPI, and USART controllers
- Created board support package for I2C-based RTC module and 16x2 LCD display exclusively using custom HAL API functions
- Conducted **hardware validation** using logic analyzer to verify protocol timing and signal integrity

I2C/SPI-to-UART Bridge Driver (SC16IS740) June 2025

- Developed modular embedded C driver for NXP SC16IS740 communication bridge
- Conducted systematic validation using loopback tests, integration testing with **STM32**, and **logic analyzer** verification
- Abstracted low-level **I2C/SPI** operations, enhancing code debuggability and maintainability for complex embedded systems

INTERESTS AND ACHIEVEMENTS

- **Humber IEEE Student Branch Secretary**
- Computer Engineering Technology Award (2021)
- Hobbies: PC building, electronics, piano/guitar/drums, camping, astrophotography