

Hunter Jensen

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Competencies

Engineering Skills

- **Electrical:** PCB design in Altium & KiCAD, understanding of circuit schematics, built combinational logic circuits, bread boarding, lab equipment (oscilloscope, DMM, function generator, spectrum analyzer, radio test set, CAT 5 Cable Tester, etc.), STM32, MSP430, and Raspberry Pi microcontrollers, FPGA development
- **Design:** Multiple projects including a clock radio, LAI optical system, transmitter/receiver automation
- **General:** SMT 0603 soldering capabilities developed through 8-month co-op with Zetron

Computer Skills

- **Languages:** C/C++, Python, VHDL, assembly language, and MATLAB
- **Software applications:** MS office, Google suites, Eclipse IDE, Vivado Design Suite, GNU Radio, SDR
- Designed, simulated, and implemented adder and multiplier logic in VHDL using Vivado Design Suite onto an FPGA board through a digital design and VLSI course.

Work Experience

DAAD Rise Germany Intern

May – August 2025

Laboratory for Intelligent Embedded Systems – Karlsruhe University of Applied Sciences Germany

- **Project:** LAIsens – Low power optical sensing system for Leaf Area Index measurement using a dynamically adjustable field-of-view
- Selected for the prestigious DAAD RISE program to design a low-power optical measurement system
- Researched and designed a multi-sheet hierarchical schematic in KiCAD incorporating an MSP430 microcontroller and Texas Instruments DLP2000 digital micromirror device (DMD)
- Designed a 5V USB-c power stage utilizing buck regulators and LDOs to generate 3.3V, 1.8V and 1.0V rails for MCU logic, SDRAM, and peripheral sensors
- Integrated the AS7341 multispectral and MCP9808 temperature sensors via I²C for environmental data collection, and a LAMBDA62 LoRa transceiver for long-range wireless communication
- Developed a dual-master SPI bus topology to allow the MCU to program the DMD controller's SPI flash without interrupting active operations
- Performed detailed selection of ICs, regulators, and passive components balancing performance and ultra-low-power operation

Hardware Designer Co-op

May – December 2024

Zetron, a Codan Company

Victoria, BC

- Built and optimized an automation test rack for remote testing of Zetron's site manager units
- Operated lab equipment including network analyzers, spectrum analyzers, and radio test sets to successfully test and document various specifications on Zetron's MT-4 transmitters/receivers
- Supported the RF design engineers with component selection, soldering rework, troubleshooting, and analysis of failed PCB's
- Initiated automation test rack design for Zetron's MT-5 transmitters/receivers by gathering information from key stakeholders, drafting detailed block diagrams, creating a custom cable for transmitter testing, drafting a schematic of the cable connector, and began a sophisticated switching and power supply schematic in Altium
- Connected with international sales representatives to choose a new benchtop digital multimeter and environmental test chamber, ensuring alignment with hardware team specifications
- Participated in schematic and PCB layout reviews in Altium
- Recognized as hardware team MVP for September for quick preparation of an automation rack for manufacturing team and meticulous documentation of commercial dart board testing
- Conducted a detailed Bill of Materials review for the London Underground Train Radio project, verifying parts against Zetron's inventory

Combat Systems Co-op Student

Department of National Defence

September – December 2023

Fleet Maintenance Facility Cape Breton, Victoria, BC

- Developed an intensive 400+ page troubleshooting manual for an electronic warfare detection system on board the Halifax class frigates in the Royal Canadian Navy.
- Solved complex faults utilizing hands on troubleshooting with RF tools such as spectrum analyzers in addition to analyzing schematics and researching possible causes.
- Documented comprehensive solutions to faults within the electronic warfare detection system and received praise from numerous section heads during end-of-term presentation.
- Communicated expertly with two other co-op students and an electronic technologist to manage the large project scope including a near 500-page document in Microsoft Word.

Club – University of Victoria Autonomous Underwater Vehicle Club (AUVIC)

Co-president - August 2023 – May 2024 | **Electrical Team Member** – January 2023 – May 2024

- Contributed to the electrical team for an autonomous underwater vehicle competing in Robosub 2024, an international competition in San Diego, California.
- Grew the team from 12 to 30 active members and managed finances as co-president
- Performed SMT soldering on various PCBs, wiring harnesses, and internals of the vehicle.

Projects

Embedded Systems Design Project

September – December 2025

- Designed and implemented an embedded system using an STM32F0Discovery board to monitor and control an external NE555 timer circuit, measure frequency and display results on SSD1306 SPI OLED display.
- Developed a PWM control loop using a polling approach for ADC potentiometer readings and DAC output to drive a 4N35 optocoupler, modulating the NE555 timer's frequency.
- Implemented frequency calculation logic using the microcontrollers interrupts to count clock cycles
- Configured an SSD1306 OLED display via SPI to show real-time potentiometer resistance and frequency

Clock Radio Design Project

May – July 2023

- Created a clock radio able to change between time formats, set alarms, snooze, and tune in to the radio.
- Completed rigorous testing of the various circuits using bread boards and then utilized PCB design knowledge in KiCAD to develop a custom breakout board for the clock radio.
- Programmed the functionality of the clock radio in Python using the Thonny IDE.
- Completed the project by designing an enclosure in SolidWorks and 3D printing it.

Education

University of Victoria

Bachelor of Engineering

Electrical Engineering, 5th Year

University of Victoria Excellence Scholarship (\$24,000)

September 2021 - Present

Victoria, BC

Expected Graduation: 2026

Certifications

ISED Canada Certificate of Proficiency in Amateur Radio - Basic qualification with Honours

*The below certifications were obtained with the Department of National Defence:

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| • Submarine Safety Awareness | • Fall Protection | • RF Safety Awareness | • Asbestos Awareness |
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Volunteer Work

I have volunteered at the Victoria Marathon, multiple events with the View Royal Fire Department, and Explore UVic, an open house event to showcase the incredible work being done at UVic.

References are available upon request.