George Sleen

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EDUCATION

University of British Columbia — Vancouver, BC
Bachelor's of Applied Science, Engineering Physics (Electrical Option) — *2023 — 2028*

- Dean's List
- Relevant Coursework: Circuit Analysis, Signals and Systems, Principles of Software Construction, Instrument Design, Experimental Techniques, Electricity and Magnetism, Quantum Mechanics, Vector Calculus, Linear Algebra

WORK EXPERIENCE

Electronics Design Intern — Jan 2025 — May 2025
Blue Robotics — *Victoria, BC*

- Designed high speed PCBs with signals up to 125 MHz
- Analyzed transmission line characteristics of custom cables and PCB traces
- Validated circuit design with SPICE tools and development PCBs
- Characterised transmission speeds and bandwidth using a Raspberry Pi and Linux
- Developed an internal tool for managing KiCad library integration with our part database in Python

PROJECTS

Autonomous Pet Retrieval Robot (github.com/enph253-2025-team5) — May 2025

Fully autonomous robot built to traverse an obstacle course, pick up stuffies, and return them to safety.

- Designed an h-bridge from scratch to control DC motors (github.com/enph253-2025-team5/dual-h-bridge-pcb)
- Isolated microcontroller and motor grounds, significantly reducing noise in sensor measurements
- Used FreeRTOS to handle concurrent control of actuators, sensors, and I2C buses
- Closed motor control loops with PID control, enabling centimeter level positional accuracy for our robot
- Detected specific objects (pet stuffies) using multiple I2C LiDAR modules and convolution with the expected shape

8-Bit Computer (github.com/georgesleen/8-BitComputer) — May 2024

Turing complete computer built from discrete components.

- Designed modular PCBs (registers, program counter, memory) based around the 7400 series ICs in KiCad
- Fully simulated the computer working in a digital logic simulator
- Wrote programs in machine code and custom assembly

EXTRACURRICULARS

Electrical Drive Member — Sept 2025 — Present
UBC Sailbot — *Vancouver, BC*

- Wrote firmware for the STM32U575 microcontroller using the STM32 HAL
- Used DMA for ultra fast UART communication to avoid collisions with other vessels over AIS
- Communicated with a Raspberry Pi ROS node over CANBUS

Design Team Captain — Aug 2024 — Aug 2025
SUBC — *Vancouver, BC*

- Managed a team of over 60 people in the design and manufacturing of a race submarine for international competition
- Oversaw a budget of $40,000

SKILLS

Electrical: KiCad, Circuit Analysis, SPICE Simulation, Soldering, Transmission Line Analysis, Oscilloscopes, Verilog, SystemVerilog, Digital Logic, Computer Archiecture, Altium, SWD, JTAG, Controls, STM32, Registers, DMA

Software/Firmware: Git, C/C++, FreeRTOS, Python, Bash, GDB, Linux, PID Control, Rust, Docker, Java, OOP, RTOS, Scripting, CI/CD, Computer Vision, ROS, Networking, PyTorch, TensorFlow, Computer Vision, Machine Learning