

# Warrick Lo

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## Skills

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**Technical Languages:** C, C++, Python, MATLAB, SystemVerilog, x86 Assembly, ARM Assembly, Bash, VBA, SQL  
**Software:** Altium Designer, Fusion 360, SolidWorks, Ansys HFSS, LTspice, Excel, Git, LLDB, LaTeX, Linux, FreeBSD  
**Hardware:** Vector Network Analyser, Spectrum Analyser, DE1-SoC, Arduino, ESP32, I2C, Oscilloscope  
**Languages:** English, Cantonese, Mandarin (limited proficiency)

## Education

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**The University of British Columbia** 2024 SEPTEMBER–2028 APRIL  
*Bachelor of Applied Science in Electrical Engineering*  
Co-op program

**Langara College** 2023 SEPTEMBER–2024 APRIL  
*Certificate in Arts and Science (Engineering)*  
GPA: 3.85

## Projects

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**ALEASAT, UBC Orbit Satellite Design Team** 2024 SEPTEMBER–PRESENT

- Measured S-parameters, third-order intermodulation distortion (IMD3), and 1 dB compression point (OP1dB) of the GRF5504 power amplifier (PA) to determine its linear range for satellite-to-ground communication
- Conducted detailed simulations of spacecraft antenna using Ansys HFSS to determine theoretical antenna gain, analyse radiation patterns, and verify compliance with link budget requirements

**Simple RISC Processor** 2024 NOVEMBER–2024 DECEMBER

- Architected and implemented a Turing-complete, 5-stage, non-pipelined RISC processor in SystemVerilog, synthesised onto the DE1-SoC development board, achieving the 3rd fastest performance in a class of 350 students

**FM Radio Receiver** 2024 JULY–2024 AUGUST

- Utilised Altium Designer to design schematics for a radio receiver circuit, incorporating an LC oscillator circuit to select FM signals and an LM386 audio amplifier circuit to boost volume

**Quadcopter** 2024 APRIL–PRESENT

- Implemented a Kalman filter in Arduino C code to combat gyroscopic drift caused by sensor noise
- Interfaced with the MPU-6050 inertial measurement unit (IMU) by communicating using I2C
- Designed and developed a prototype in Fusion 360, incorporating an Arduino, brushless motors, electronic speed controllers, and a lithium polymer battery

**Simple OS Bootloader** 2022 JANUARY–2022 MAY

- Implemented a bootloader in x86 assembly, utilising QEMU and LLDB for debugging

## Work Experience

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**Pack Buildings** *Richmond, BC*  
*Construction Management Intern* 2024 JULY–2024 AUGUST

- Organised 10 spreadsheets of financial data in Excel, enhancing clarity for project investors
- Participated in meetings with project investors and construction team, ensuring investor priorities were addressed

## Volunteer Experience

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**Lingyen Mountain Temple** *Richmond, BC*  
*Teaching Assistant* 2023 APRIL–PRESENT

- Delegated tasks to a group of around 40 youth volunteers, resulting in approximately a 30% increase in efficiency
- Authored 16 pages of technical documents outlining job procedures, improving workflow and reducing errors

**Buddhist Youth** 2017 APRIL–2023 MARCH

- Ensured a satisfactory experience for approximately 1000 weekly visitors through serving meals and maintaining a clean environment