Christopher Kalitin **Bachelor of Integrated Engineering**

Burnaby, BC Christopher.Kalitin@gmail.com | 778-980-4863 | LinkedIn

TECHNICAL SKILLS

PCB Design
- Altium
- KiCAD
- I2C / SPI IC Communication
- CMOS / Comparator Circuits

Programming
- C++ - SDL2
- C - STM32, ESP32
- C# - Unity
- Python - NumPy, Pandas
- CNNs - PyTorch

Hardware
- SMT and THT Soldering
- Reflow Oven
- DMMs, AFGs, Oscilloscopes
- SolidWorks

EDUCATION

University of British Columbia **Expected Graduation Apr 2028**
Bachelor of Applied Science - Integrated Engineering

ENGINEERING OR DESIGN STUDENT TEAMS

UBC Solar, UBC **Sep 2024 – Present**
Battery Management System (BMS) Member
- Designing the High Voltage Controller (HVC) for the v4 battery pack. This controls contactors, hosts the DCDC, communicates with the BMS over GPIOs and CAN, etc.
- Characterized HASS-100S current sensor & STM32 ADC readings to increase sensor precision by more than 10x from 1.5 A to 140 mA.
- Wrote Python SCPI scripts for automated data collection from Digital Multimeters and Function Generators.

TECHNICAL PROJECTS

Analog BMS Li-ion Battery Module, GitHub, Personal Project **Aug 2025 – Sep 2025**
- Designed 1s2p lithium-ion battery module enclosure in SolidWorks, account for cell dimension and 3D printer tolerances.
- Developed analog BMS in KiCAD using comparators, shunt voltage references, and P/N channel MOSFETs to handle under/over voltage, temperature, and current faults.

Automated ADC Characterization, GitHub, UBC Solar **Sep 2024 – Feb 2025**
- Wrote STM32 firmware in C to capture DMA ADC values via UART, interfacing with Python script.
- Automated voltage/current sensor characterization using SCPI commands to DMMs and AFG, generating error polynomials.
- Debugged and optimized UBC Solar current sensor system for accurate sensor data output.

Unity Networking Library, GitHub, Personal Project **Oct 2022 – Sep 2023**
- Developed 8k-line C# Unity networking library abstracting .NET functions for user-friendly game development.
- Implemented features including synced network game objects, local server hosting, interpolation, and automated packet generation.
- Applied library in custom multiplayer strategy game, Tiny Troops.

Space Industry Data Analysis, GitHub, Personal Project **Apr 2025 – Present**
- Created Python/Pandas library to analyze Jonathan McDowell's launch and space object dataset, improving data accessibility.

- Authored 10+ blog posts on commercial satellite launch market, with one read by Rocket Lab CEO Peter Beck, another by NordSpace CEO Rahul Goel.

Blunt Body Mars Entry Vehicle Modelling, GitHub, Personal Project **Apr 2025 – Aug 2025**

- Built Python simulation to derive impact velocity vs. ballistic coefficient graph for Mars entry vehicles.
- Validated model against NASA data for Phoenix and Perseverance landers, ensuring accuracy.
- Used polar coordinates to consider curvature of Mars for skip reentries.

INTERESTS & ACTIVITIES

- Attempting to write CNNs for Chess Position Evaluation, have tried this 2-3 times in trying to get better at training Neural Nets and PyTorch. GitHub.
- Writing blog posts on the history of human spaceflight. Here's one on the most prolific space station modules.
- Writing flight control software for simulated orbital-class booster landings.
- Analyzing the commercial satellite launch market and publishing insights.