

# ITAI BOSS

✉ itai.s.boss@gmail.com | 🌐 itai-boss | 🌐 itaiboss | ☎ +1(207)745-8980 | 🇺🇸 U.S. Secret Clearance Eligible

Motivated Engineering Physics student looking for summer 2026 internships within robotics, embedded firmware, and sensing and controls system. I am an outdoor enthusiast and took a gap year to thru-hike the Appalachian Trail.

## EDUCATION

### BASc. - Engineering Physics

09 2021 – Current

University of British Columbia

GPA: 3.95

- Engineering Physics is a 5-year program that integrates applied math and physics courses with computer, mechanical and electrical engineering with a focus on first principles and project based courses.

## SKILLS

**Programming Languages:** Embedded C, Rust, MatLab, Python, C++, VHDL, 8051 Assembly, LabVIEW

**Tools:** ROS, Gazebo, Tensorflow, Git, Linux, Excel, SolidWorks, EAGLE, KICAD, Lumerical, DSP

## TECHNICAL WORK EXPERIENCE

### MIT Lincoln Lab (Lexington, MA)

05 2025 – 08 2025

Advanced Electro-Optical Systems Intern - Space systems & Technology

- Developed system identification and characterization tools for an agile low earth orbit satellite motor payload.
- Deployed continuous integration and self-check routines for embedded flight hardware.

### ASML (Wilton, CT)

05 2024 – 12 2024

Mechatronics and Control Systems Engineer Intern

- Developed servo calibration and verification tools for production units.
- Designed hardware and FPGA/Real-Time firmware for a servo/sensor assembly calibration test stand.

### Maine In-situ Sound and Color Lab, University of Maine

05 2022 – 08 2022 | 09 2023 – 05 2024

Sensor Design Intern

- Developed a low cost proof of concept water turbidity sensor using commercially available electronics for use in water quality testing and oceanographic research.
- Developed open-source firmware and PCB designs for the ADPD1080 PFE.

### Voltsafe Inc. (Vancouver, BC)

01 2023 – 05 2023

Embedded Firmware Co-op

- Developed firmware using embedded C on ESP32 micro-controllers on ESPIDF.
- Designed and implemented critical safety features in production, as well as internal debugging tools.
- Maintained documentation and version control using Confluence and Jira.

## PROJECTS

### Anti-Deepfake Camera

Winter 2024

- Designed a proof-of-concept camera and sensing system using a Raspberry Pi to demonstrate secure and tamper-proof video capture.

### Imitation Learning Vehicle Control

Fall 2023

UBC Machine Learning Competition

- Designed an end-to-end imitation learning control system for an autonomous vehicle in a simulated environment using ROS and Gazebo. Control system able to autonomously navigate the course, avoid pedestrians and read clue boards/license plates. Placed first overall with the highest accuracy and fastest time.

### Autonomous vehicle/robot

Summer 2023

- Six week team project to prototype, develop and tune an autonomous robot from scratch to navigate a complex racetrack. Responsible for design of the finite-state machine and PID control algorithms. Designed PCBs including power distribution, motherboard, and custom peripheral sensors.

### Custom Macropad

Spring 2023

- Designed a keypad using the KB2040 micro controller with circuitPython. Designed an SMD PCB to interface with keys, LEDs, encoders, sliders and an OLED display.

## EXTRACURRICULARS

### UBC Rocket Design Team

09 2022 – 09 2023

- Avionics system design and sensor interfacing on Teensy. GPS and IMU integration for Kalman filtering.

### UBC Subbots Design Team

09 2021 – 09 2022

- Developed Autonomous Underwater Vehicle (AUV) navigation and control packages with ROS2.