

# Luca Jones

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## Education

BASc, Engineering Physics, University of British Columbia | GPA: 92%

(September 2023 - present)

## Skills

- |                         |   |
|-------------------------|---|
| • Electronics           | Altium Designer, KiCAD, Circuit Analysis, Prototyping, PLC      |
| • Mechanical Design     | 3D CAD, Onshape, Machining, Lathing, Milling, Water Jet Cutting |
| • Embedded Systems      | Linux, NVIDIA Jetson Platforms, FreeRTOS, ESP32, Raspberry Pi   |
| • Programming Languages | C, C++, C#, Python, Java, Matlab, Bash scripting                |
| • Programming Tools     | Make, CMake, Git, Azure DevOps, Docker                          |

## Work Experience

### UBC Bionics Design Team - Electrical Sub-Team Lead

(January 2025 - present)

- Collaborates with a large team of engineering students to design a semi-autonomous prosthetic arm to compete at Cybathlon, the largest assistive technology competition in the world.
- Leads the electrical sub-team by defining board interfaces, reviewing designs, and ensuring successful integration of all PCB modules.
- Leads the electrical sub-team by defining the system-level electrical architecture, facilitating meetings, and coordinating integration with the mechanical design sub-team.
- Designs the carrier board PCB, integrating power, control, and communication electronics within the tight mechanical constraints of the forearm enclosure.

### Engineering Intern at Reach Technologies Inc.

(May - Aug 2024)

- Developed imaging software and wrote documentation for a short wave infrared (SWIR) image sensor, enabling the successful alignment of a custom Bayer filter on the sensor.
- Identified and resolved a critical bug in the sensor's driver, eliminating the severe artifacts ruining the quality of the frames of the video stream.
- Designed an H-bridge PCB to drive a Peltier cooler using PWM control.
- Programmed an ARM microcontroller in C to control the SWIR sensor's temperature through the Peltier cooler, reducing thermally induced noise and increasing the image quality.
- Implemented a gRPC service between the camera streaming software in C++ and an image processing program written in C# to integrate the sensor into the existing system.

### UBC Bionics Design Team - Data Analytics Sub-Team

(January 2024 - January 2025)

- Compiled and annotated a dataset of hundreds of images of the objects used in the competition to train the machine learning model.
- Trained a computer vision model using the Yolo V8 framework to assign grip types to objects.

## Projects

### Autonomous Robot Competition

(July - Aug 2025)

- Designed a fully autonomous robot within a small team to navigate a course and retrieve stuffed animals.
- Drafted components using CAD software and built the robot with a variety of materials and techniques.
- Designed circuits and PCB layouts to control sensors and actuators such as the arm or LIDAR sensors.
- Wrote concurrent FreeRTOS software for the ESP32 microcontroller to control the autonomous robot.

## Achievements

- Ranked in the top 20% in the William Lowell Putnam Mathematical Competition, the most prestigious undergraduate math contest in the world.
- Awarded the Thomas Beeching Scholarship for top students in the Faculty of Applied Science at UBC.
- Received the UBC Canadian Open Math Competition Scholarship Award.