Jamie Laguerta

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Education

The University of British Columbia **Sept. 2020 – April 2024**
Bachelor of Applied Science in Integrated Engineering *Vancouver, BC*

Experience

Research Engineer **July 2024 – March 2025**
ATR *Kyoto, Japan*

- Built a Python pipeline to standardize 3D motion capture data for consistent processing across sessions.
- Integrated acceleration and foot-force sensors using signal synchronization and data preprocessing techniques.
- Designed and 3D printed mechanical fixtures to support human-motion experiments.
- Contributed to a peer-reviewed study on artifact removal in mobile EEG; published in Frontiers in Neuroergonomics (2024).

Research Engineer Intern **Oct. 2022 – Aug. 2023**
ATR *Kyoto, Japan*

- Developed a C++ laser-triggering system for synchronizing sensors in motion capture setups.
- Configured and calibrated wireless IMU devices (Xsens MTw) for kinematic tracking.
- Wrote tooling scripts in Python and managed embedded sensor data pipelines.

Engineering Intern **May 2022 – Aug. 2022**
GEA Refrigeration *Richmond, BC*

- Led small-scale quality improvement projects to enhance manufacturing efficiency on the production floor.
- Assisted in preparation for safety audits, aligning with recommendations from external regulatory bodies.
- Applied Lean principles to evaluate and optimize workflow in the sheet metal fabrication area.

Electronics Manufacturing Intern **May 2021 – Aug. 2021**
Algo Communication Products Ltd. *Burnaby, BC*

- Assembled, programmed, and tested a variety of telecommunications products on the production line.
- Diagnosed and repaired defective units using multimeters, inspection tools, and original schematics.
- Applied 5S and Lean Manufacturing principles to reduce waste and improve workstation efficiency.

Projects

3D Printing Web Platform | *React, Django, PostgreSQL* **Feb. 2025 – Present**

- Spearheading full-stack development of a web app for booking 3D printing jobs with local makers.
- Designed Django REST APIs for authentication, job workflows, and printer management; validated endpoints with Postman and curl.
- Built React frontend (Vite, MUI) with role-based access; integrated a Flask microservice to estimate print cost and time via G-code slicing.
- Deployed dev environment on Render; planning full system testing and payment integration via Stripe.

Demining Rover Capstone Engineering Project | *Microcontrollers, C++, CAD* **Sept. 2023 – April 2024**

- Designed and manufactured a 3D-printed rack-and-pinion actuator in SolidWorks to trigger a spray can for marking potential landmine locations.
- Programmed and wired the motor to dispense paint and monitor paint levels.
- Integrated mechanical and electrical subsystems to ensure precise actuation and consistent paint delivery.

Engineering Skills

Design & CAD Tools: SolidWorks, Fusion 360
Analysis & Simulation: MATLAB, Simulink
Fabrication & Prototyping: 3D Printing, Laser Cutting, CNC Machining, Soldering, Power Tools
Programming: Python, C/C++, Arduino
Engineering Practices: Lean Manufacturing, Safety Audits, Design for Manufacturing (DFM), Root Cause Analysis