

Lyra Fletcher

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EDUCATION

University of British Columbia

Expected Graduation: May 2028

Bachelor of Applied Science – Mechanical Engineering, Mechatronics

- **Minor:** Entrepreneurship | **CGPA:** 87.7%
- **Awards:** Schulich Leader Scholarship – \$80,000 | McEwen Family Entrance Award – \$25,000

TECHNICAL SKILLS

- **CAD & Simulation:** SolidWorks, Creo, ANSYS Mechanical/Fluent, MATLAB, Simulink, TracePro; FEA/CFD
- **Programming & Embedded:** Python, C/C++, ESP32, Raspberry Pi, ArduPilot, Pixhawk 6C; data acquisition
- **Electronics & Controls:** Altium (PCB design), circuit prototyping, sensor/servo integration, VHDL, PLCs, ladder logic
- **Fabrication & Testing:** CNC, TIG/MIG welding, 3D printing, DFMA, structural/thermal testing

TECHNICAL EXPERIENCE

Airmetal, Ottawa, ON

May 2026 – Aug 2026

Electromechanical Engineering Co-op / Acting Mechanical Team Lead

- Developed an ESP32-based structural instrumentation system measuring wing bending loads, vibration, acceleration and temperature; processed experimental data in Python to guide prototype iterations.
- Integrated commercial sensors, Pixhawk 6C, servos and telemetry across 4 UAV prototypes; built 4 flight-measurement setups and processed airspeed, groundspeed and actuation data in Python.
- Built a linear-actuator-driven test rig; characterized tear propagation and puncture resistance in batches of up to 20 samples at varied temperatures.
- Evaluated 4 prototype aircraft, comparing measured bending response with theoretical predictions to refine foam layups, spar reinforcement and weight distribution.
- Served as Acting Mechanical Team Lead, coordinating a 4-person team, technical reviews and engineering priorities.

NETGEAR, Richmond, B.C.

May 2025 – Dec 2025

Mechanical Engineering Co-op

- Built ANSYS thermal and structural models using measured material properties; thermal predictions agreed within 7% of experimental data, while structural studies covered torsion and three-point bending on 2 products.
- Designed and FEA-validated precision PCB connector tooling, reducing installation time by 15% and improving assembly repeatability.
- Developed relay-controlled pneumatic vacuum assembly fixtures through iterative prototyping and DFMA, reducing assembly time by 30%.
- Designed, simulated and released injection-moulded optical light pipes for 8 commercial products.

ENGINEERING STUDENT TEAMS

Thunderbikes, University of British Columbia

Sep 2023 – Present

Mechanical Team Lead (2025–Present) · Cooling & Thermal Management Lead (2024–2025)

Developing an [all-electric racing motorcycle](#) for MotoStudent Spain 2027.

- Led a 30-member mechanical engineering team, managing a \$22K budget, approving technical designs and expenditures, and overseeing subsystem development through weekly reviews and design milestones.
- Led a 4-person cooling subteam to design a 16 kW liquid-cooling system (+41% yoy), including 8 kW battery cooling plates.
- Model battery-pack and cooling-plate heat transfer using Python, MATLAB and ANSYS; compare predicted temperatures and heat rejection against physical measurements.
- Designed and fabricated structural assemblies and battery enclosures using CAD, FEA, CNC machining and welding; integrated mechanical subsystems for electric motorcycle development.

TECHNICAL PROJECTS

Automated Naloxone Injector

2020 – 2023

Independent Biomedical Mechatronics [Personal Project](#) to combat the opioid epidemic.

- Prototyped a wearable naloxone injector combining pulse-oximetry sensing, Arduino control, PCB electronics and PWM-driven linear actuation; designed the compact injection mechanism and 3D-printed housing in SolidWorks.