

# Laird Scabar

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## EDUCATION

### University of British Columbia

Bachelor of Applied Science — 1st Year

Vancouver, BC

Sept. 2025 – Apr. 2030 (Expected)

## TECHNICAL SKILLS

**Mechanical Design:** CAD (SolidWorks), DFM, DFA, FEA, GD&T, Prototyping

**Manufacturing:** 3D-Printing, CNC, Machining (Mill, Lathe, Band Saw, etc.)

**Analysis & Programming:** MATLAB, Python, C/C++, OpenCV, HTML/CSS, Git

**Certifications:** Certified Solidworks Design Associate (CSWA)

## EXPERIENCE

### SUBC - UBC's Submarine Design Team

Sept 2025 – Present

Drive Train Sub-team Member

Vancouver, BC

- Designed drivetrain components in SolidWorks using DFM principles, producing manufacturable CAD models and fabrication drawings for subsystem integration.
- Performed FEA stress and deformation analysis to evaluate safety factors, reducing peak stress concentrations by 30% and improving structural reliability.
- Prepared CNC-ready components by applying tolerancing and fit checks to ensure accurate and seamless assembly of the gearbox.
- Supported drivetrain integration through iterative prototyping and cross-team collaboration, reducing assembly times by 50%.

### Film & Television Acting

2015 – 2025 (on pause)

Professional Film & Television Actor

- Performed in various professional film and television productions broadcast by the likes of CBC, Netflix, and Disney.
- Collaborated with multidisciplinary production crews of 30-100+ people to deliver performances under strict shooting schedules.
- Developed strong communication, adaptability, and presentation skills through scripted and improvisational screen work.
- Balanced 10+ years of professional acting with full-time academics and athletics, demonstrating time management and reliability.

## PROJECTS

### Gearbox Side Plate & Step-Down Collar | SolidWorks, FEA, CNC, DFM

October 2025

- Designed, optimized, and fabricated gearbox side plate using CAD and FEA insights, reducing weight by 50% while maintaining required safety factors under peak torque loads.
- Conducted stress and deformation analysis to guide material removal, improving strength-to-weight ratio by 35%.
- Contributed to the design and fabrication of a custom step-down collar for our smaller output gear through CAD iteration and fit checks, eliminating slippage and restoring drivetrain alignment.
- Produced CNC-ready manufacturing drawings, enabling machining with zero rework and reducing fabrication turnaround time by 20%.

### Autonomous Robotic Claw | C++, SolidWorks (Sheet metal), Rapid Prototyping

January 2026

- Designed and fabricated an automated robotic claw capable of detecting and grasping objects using an ultrasonic sensor and servo-driven mechanism.
- Programmed Arduino micro-controller in C++ to implement distance-based actuation logic, enabling autonomous object pickup without manual control.
- Produced technical drawings and dimensioned CAD documentation following standard drafting practices to support fabrication and assembly.
- Integrated mechanical, electrical, and software subsystems while troubleshooting sensor noise and servo calibration, improving detection reliability to ~90% during testing.