Benjamin Lee

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Education

University of British Columbia **Expected May 2027**
Bachelor of Applied Science - Mechanical Engineering GPA: 3.70
Relevant Courses: Solid Mechanics, Heat Transfer, Thermodynamics, Material Science, Vibrations

Experience

Mechanical Design Intern, Tesla – Palo Alto, CA Sep 2025 – May 2026

- Design precision electromechanical test fixtures using **CATIA** and **SolidWorks**, interfacing with controllers, cameras, sensors, and PCBAs to validate product functionality and assembly feasibility.
- Perform **tolerance analysis** and **finite element analysis (FEA)** to validate part performance and structural integrity under operational conditions.
- Create 2D drawings ensuring manufacturability and adherence to **GD&T** standards.
- Conduct **Design for Manufacturing (DFM)** reviews with suppliers and support tooling bring up

Manufacturing Engineering Intern - Battery Module/Pack, Tesla – Sparks, NV Jan 2025 – May 2025

- Coordinated the mechanical, electrical, pneumatic, and PLC integration of 28+ new equipment installations, **increasing production line hourly throughput by 20%.**
- Led testing and validation of new battery programs, utilizing custom **SQL** and **Python** scripts to extract insights and support the scale-up to full-volume manufacturing.
- Designed ergonomic tooling and high-capacity station assemblies in **SolidWorks**, improving operator comfort and **increasing production efficiency by up to 22%.**

Manufacturing Engineering Intern, Kardium Inc. – Burnaby, BC May 2024 – Sept 2024

- Designed, prototyped, and deployed a new product cleaning station using **SolidWorks**, in-house machining, and rapid prototyping, **reducing previous process time by 75%.**
- Assembled custom subsystems consisting of mechanical, electrical, and pneumatic components to **increase production capacity by 30%.**

Manufacturing Engineering Intern, Escape Trailer – Chilliwack, BC May 2023 – Dec 2023

- Led and owned the mechanical interior design of a flagship trailer model (Escape 23) in OnShape, **generating $1.2M in pre-release sales**.
- Improved structural strength using FEA and strain gauge testing, **increasing roof/chassis stiffness by 15%.**
- Developed jigs/fixtures to support production assembly, **reducing nonconformance by 40%.**

Projects

UBC UAS Payload Lead – UAV Passenger Airbus

- Led mechanical design for two autonomous UAVs (care-package and fire-suppression), managing a team of 10+ students.
- Performed **FEA** simulations to **increase aircraft rigidity by 15% and reduce weight by 20%.**

Motorized Drift Tricycle Project

- Designed and fabricated a 3HP gas-powered drift trike using custom shaft, sprocket, and frame assemblies.
- Ran force simulations in **MATLAB** to ensure structural safety and performance under dynamic loads.
- Machined steel components and welded the full chassis, iterating based on road test performance.

Skills

Software: Enovia, CATIA, SolidWorks, ANSYS, OnShape, Python, MATLAB
Manufacturing: 3D Printing (FDM/SLA), CNC, Manual Lathe/Mill, Welding (Laser/TIG), Water Jet Cutter, Laser Cutter
Knowledge: ASME Y14.5 (GD&T), FEA, DFM/DFA, FANUC, PLC, Lean Manufacturing