Juan Flautero

Aspiring Product Design Engineer | Available Summer 2026 for Internship

Vancouver, BC

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SKILLS

Design & Analysis: CAD (CATIA v6, SolidWorks), GD&T, FEA (Ansys), DFM/DFA, Tolerance Analysis, MATLAB
Manufacturing & Prototyping: Plastic Design for Production, Sheet Metal Stamping, Waterjet, 3D Printing
Testing & Validation: Experiment Design, Failure Analysis, C, Circuit Design, Microcontroller, UTM

EDUCATION

University of British Columbia, Vancouver **Expected Graduation April 2027**
Bachelor of Applied Science - Mechanical Engineering, Mechatronics option

PROFESSIONAL WORK EXPERIENCE

TESLA, Inc. – Palo Alto & Fremont, California, USA **August 2024 – August 2025**

Mechanical Design Engineering Intern – Crash Sensing *May 2025 – August 2025*

- Validated data from 65+ crash tests, driving calibration upgrades from prototype to production; established a new DAQ pipeline and documentation process **improving onboarding efficiency by 20%.**
- Redesigned acceleration-sled control system with new circuitry and **LCD interface**, restoring testing capability.
- Designed production-ready stamped metal bracket for urgent change by aligning with design engineers and securing assembly plan approval within days.

Mechanical Design Engineering Intern – Thermal/HVAC *January 2025 – May 2025*

- Designed and **launched a blow-molded air duct** from concept to production, applying surface modeling, GD&T, tolerance analysis, and **DFM/DFA for plastics** while collaborating with international suppliers and supporting prototype builds.
- Enabled component production tool kick-off by rapidly validating design and standardizing water ingress tests, defining previously unknown system-level characteristics.
- Spearheaded a **$300K/year cost-down** initiative by analyzing bolted joint mechanics and plastics under heat-aging creep, validated using ultrasonic clamp load testing.

Mechanical Design Engineering Intern – Chassis Engineering *August 2024 – December 2024*

- Optimized stamped metal bracket and airline routing using kinematic studies and FEA (structural, modal, random vibration), **reducing material thickness by 50%** while maintaining performance.
- Automated an air suspension reliability test bench by designing a PCB, programming microcontrollers, and developing a custom MATLAB GUI for DAQ–FSM integration.
- Conducted **R&D of a custom inductive sensor** for smart chassis applications, building a 3-axis test rig to quantify alignment error.

PROJECTS AND ENGINEERING EXPERIENCE

UBC Baja SAE – UBC **September 2023 – Present**
Mechatronics Sub-team Co-Lead

- Leading a cross-functional team of 8 members, coordinating design, testing, and integration of vehicle systems.
- Designed and tested actuation system for electronic suspension by specifying hardware and programming multi-motor control to enable terrain presets and improve driver adaptability.

Manual Continuously Variable Transmission (MCVT) – UBC **January 2024 – April 2024**

- Designed and prototyped a servomotor-controlled CVT for a rough terrain RC vehicle, optimizing pulley geometry and material selection within competition constraints.