JASON C. WEI

Mechanical Design Engineer · Battery Engineering, Tesla

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EXPERIENCE

Mechanical Design Engineer · Tesla, Battery Engineering — Palo Alto, CA — Jul 2025 – Present

- Designing power and signal distribution in a next-gen battery pack.

Mechanical Design Engineering Intern · Tesla, High Voltage Distribution — Palo Alto, CA — Jun 2024 – Sep 2024

- Owned design and DFM of two new die-cast high-voltage connector headers.
- Designed a face seal profile with Ansys hyperelastic simulation, raising contact-pressure/reaction-force ratio 52%.
- Optimized snap joints for low insertion and high retention force with CAD-driven Ansys parameter sweeps.
- Cut header unit cost 10% by removing fasteners after mapping seal limits under worst-case cover deflection.
- Routed harnesses and busbars in CAD to reduce bends and installation-order constraints.

Electrical Chief Engineer & Powertrain Lead · Gaucho Racing, UCSB FSAE — Santa Barbara, CA — Nov 2021 – Jun 2025

- Owned design and manufacturing of 8 wire-bonded, potted 2170 modules: a 538 V, 6.2 kWh pack.
- Designed HV distribution and ancillaries: main contactors, mid-pack fuse, HV disconnect, maintenance plugs.
- Designed battery water-cooling cold plates, simulated in SolidWorks Flow and validated on a pressure-drop test rig.
- Built MATLAB thermal models to size cell-level fusible links and predict pack-level thermal limits.

Mechanical Engineering Intern · Seek Thermal — Goleta, CA — Jun 2023 – Oct 2023

- Designed thermal camera processor heat sinking; simulated in SolidWorks, validated in an environmental chamber.
- Designed and manufactured 3 blackbodies operating from −40 °C to 60 °C for infrared sensor calibration.
- Created 30+ Agile ECOs and GD&T drawings for new products and product revisions.
- Machined go/no-go gauges for shrinkage defects in molded PPSU; built an Excel tolerance stack-up tool.

Workshop Wizard & 3D Printer Tool Lead · UCSB CNSI Workshops — Santa Barbara, CA — Jun 2022 – Present

- Instructed 200+ researchers and grad students on workshop and microfluidic equipment.
- Fabricated and delivered 100+ CNC-milled, 3D-printed, and laser-cut custom user orders.
- Maintained and wrote SOPs for 3D printers and laser cutters (Formlabs, Ultimaker, Stratasys, Rayjet).

EDUCATION

B.S. Mechanical Engineering · University of California, Santa Barbara — Santa Barbara, CA — Sep 2021 – Jun 2025

- Dean's List · Edison Research Scholar · Wind Ensemble clarinetist
- Coursework: Heat Transfer, Mechatronics, Materials, Thermodynamics, Circuits, Machine Learning

SKILLS

HV Battery Design	Electrical contacts, blind mates, busbars, insulation, seals
Design for High Volume Manufacturing	GD&T, tolerance stack-ups, die casting, injection molding, automated assembly
CAD, FEA & CAM	CATIA 3DEXPERIENCE, Ansys Mechanical, SolidWorks, HSMWorks
Programming (vibe coding)	Claude Code, MATLAB, Python (scikit-learn, TensorFlow), Arduino
Thermal Systems	Lap-sim-coupled battery thermal modeling (MATLAB), fusible link testing, cold plates
Fabrication	Haas CNC mill, Wazer waterjet, Trotec laser; Stratasys, Formlabs, Ultimaker, Prusa printers

HONORS & AWARDS

2023 Dean's List, 3.75+ GPA

2023 MESA Qualcomm Idea Accelerator, 2nd Place

2021 Gold Presidential Volunteer Award, 500+ hours

2018 VEX Robotics CA State Excellence Award