

Jason C. Wei

MECHANICAL ENGINEER · UCSB

Pleasanton, California, USA

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Third-year MechE @ UCSB with extensive hands-on experience in EV powertrains, designing for manufacturing, thermal systems modeling, CAD, and two-phase thermofluidics.

Skills

EV Powertrain Design	Water cooled & Wire-bonded 540V 2170 Battery Pack, HV Distribution, Electrical Insulation
Design for Manufacturing	GD& T Drawings, Worst-Case & Statistical Tolerance Analysis, Injection Molding
Thermal & Dynamical Systems	Vapor Chamber-Cooled li-ion Battery Pack, Matlab Simulink Thermal Modeling
CAD, Simulations, & CAM	SolidWorks (Thermal, Fluids, & FEA), Simulink, Ansys Mechanical, HSMWorks
CNC Machining	Haas CNC Super Mini Mill, Wazer Water Jet Cutter, Trotec Laser Cutter
3D Printing	Stratasys Objet 30 Pro & F270, Formlabs Form 3, MiiCraft 50, Ultimaker S5, Prusa i3 Mk.3
Programming	Matlab, Simulink, Python (ScikitLearn & Tensorflow), Arduino

Education

University of California - Santa Barbara

Santa Barbara, CA

B.S. in Mechanical Engineering

Sep. 2021 - Jun. 2025

- Dean's List, TFEL Undergraduate Researcher, FSAE Electric Chief Engineer & Powertrain Lead, CNSI Workshop Wizard, Edison Research Scholar, Qualcomm MESA Idea Accelerator, Wind Ensemble Clarinetist, LoL Esports Player
- Relevant Coursework: Thermodynamics, Dynamical Systems, Circuits, Fluid Dynamics, Machine Learning, Statics, & Dynamics

Experience

Seek Thermal

Goleta, CA

Mechanical Engineering Intern

Jun. 2023 - Oct. 2023

- Designed and implemented heat sinking solutions for thermal camera microprocessor; simulated in Solidworks Thermal study and validated in environmental chamber
- Machined go-no-go gauges for quantifying thermal shrinkage defects in injection molded PPSU plastic
- Creates Excel script for analyzing worst-case and statistical tolerance stack-ups
- Created 30+ Agile ECOs and GD& T drawings for new products and product revisions
- Designed and manufactured 3 blackbodies with operating temperatures from -40°C to 60°C for infrared sensor calibration

Gaucha Racing (UCSB Formula SAE Electric)

Santa Barbara, CA

Electrical Chief Engineer & Powertrain Lead

Nov. 2021 - PRESENT

- Led 60 engineers in the design and fabrication of a 546 V, 81.9 kW battery pack, limited-slip differential drive train, and liquid cooling loop for an electric race car
- Built Matlab Simulink thermo-mechanical-electrical coupled systems simulation to define battery fusible link sizing and cooling requirements
- Designed battery water cooling cold plates, flow simulated in Solidworks Fluids, and verified pressure drop curve with water cooling test rig
- Designed HV distribution system, including main relays, main fuses, high voltage disconnect, and battery maintenance plugs
- Placed 20th out of 70 universities as a first-year team in 2023 Formula SAE Electric competition presentation event at Michigan International Speedway

UCSB Thermofluid Energy Research Laboratory

Santa Barbara, CA

Undergraduate Researcher

Apr. 2023 - PRESENT

- CNC milled and 3D printed a fluid boiling fixture for a NASA ISS experiment, analyzing the role of surface structures on flow boiling instabilities
- Researched and presented the use of vapor chambers, which utilize liquid-gas phase change, as a heat spreader for EV battery thermal management
- Characterizing heat pipe thermal gradients and thermal conductivities using custom built test bench

California NanoSystems Institute - CNSI Workshops

Santa Barbara, CA

Workshop Wizard & 3D Printer Tool Lead

Jun. 2022 - PRESENT

- Instructed over 200 researchers and grad students in workshop and microfluidic equipment
- Fabricated & delivered over 100 CNC milled, 3D printed, and laser cut custom user orders
- Managed, repaired, and created SOPs for 3D printers and laser cutters (Formlabs Form 3, Ultimaker S5, Stratasys F270, Stratasys Objet 30 Pro, and Rayjet 300)

Dublin Robotics Club

Dublin, CA

VEX Robotics Team Lead

Aug. 2015 - Jun. 2019

- VEX Robotics regional tournament champion & California state Excellence Award winner
- Designed & built electro-mechanical systems such as: pneumatic claws, scissor lifts, & slip gear catapults
- Programmed autonomous action sequences using ROBOTC (based on C) language

Research Presentations & Workshops

UCSB Undergraduate Research Showcase

University Center, UCSB

J. Wei, "Experimentation and Simulation of Using Vapor Chambers for Passive Li-ion Battery Pack Cooling"

Nov. 17, 2023

International Microelectronics and Packaging Society (IMAPS) Symposium

Town and Country Resort, San Diego

J. Wei, N. Rivelle, O. Liu, R. Nguyen, "UCSB FSAE Electric Battery Pack Showcase"

Oct. 4, 2023

Tesla EV Workshop

Tesla Training Center, Fremont

J. Wei, O. Liu, R. Nguyen

Sep. 29, 2023

CSEP Summer Research Poster Session

Engineering Science Building, UCSB

J. Wei, "Experimentation and Simulation of Using Vapor Chambers for Passive Li-ion Battery Pack Cooling"

Aug. 17, 2023

UCSB Materials Research Lab RISE Research Presentation

MRL 2048, UCSB

J. Wei, "Silicone 3D Printer Winter Progress"

Mar. 11, 2022

Honors & Awards

ACADEMIC

- 2023 **Dean's List**, 3.75 GPA or higher
- 2021 **AP Scholar with Distinction**, 9 AP tests with a 5 score
- 2021 **President's Education Award**, Outstanding Academic Achievement - 35 ACT Score
- 2020 **National Merit Scholarship**, Letter of Commendation

VOLUNTEERING & EXTRACURRICULAR

- 2023 **MESA Qualcomm Idea Accelerator Second Place**, Awarded for JAM Navigation prototype
- 2021 **Gold Presidential Volunteer Award**, Over 500 volunteer hours
- 2018 **VEX EDR Robotics California State Excellence Award**, Most prestigious award for best all-around robot
- 2017 **VEX EDR Robotics Regional Champion**, Tournament Champion