Rafael Petrosian

Mechanical Engineer

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SUMMARY

UC Berkeley mechanical engineer who takes hardware from concept to working parts in aerospace, motorsport, and robotics.

Designed and built a defense client's circuit test box in **one month** as Assistant Engineer at EDN Aviation.

Determined the final manufactured wing geometry as Wing Design Engineer on Cal Aero SAE. The plane placed **top 15** in the Regular Class at SAE Aero Design West 2024.

EXPERIENCE

EDN Aviation · Assistant Engineer · Van Nuys, CA — Jun – Aug 2025

- Transcribed the client's schematic, designed the analog test circuitry in CircuitJS, built the BOM and CAD models, and sent the full package to the shop floor after senior engineer review.
- Measured and modeled parts in Onshape so the CNC shop got them right the first time.
- Scripted a unique QR label for every package, saving about **10 labor hours a week**.

ENGINEERING PROJECTS

MotoStudent · Rear Suspension Lead · UC Berkeley — Sep 2024 – Dec 2025

- Led a **5-person** team designing a race motorcycle's rear suspension for an international competition in Spain.
- Owned the rear geometry and swing arm, from MotoChassis kinematics to full CAD, chassis mounts, and release to manufacturing.

πRo-Bot, Autonomous Fire-Fighting Robot · Lead Programmer — Jan – May 2025

- Designed the chassis in CAD and the electrical system, then built the competition-ready robot, wiring harnesses included.
- Wrote the C++ firmware that finds and puts out fires on its own with thermal sensors and steppers.

Thermal Paste Experiment · Analyst · UC Berkeley — Aug – Dec 2024

- Designed and ran a test of the top three CPU thermal pastes, and confirmed Thermal Grizzly Kryonaut conducts heat best.
- Milled the aluminum test rig, programmed the ESP32 data logger in Thonny, and calibrated the sensors in MATLAB.

Cal Aero SAE · Wing Design Engineer · UC Berkeley — Sep 2023 – Apr 2024

- Ran airfoil and dihedral simulations in XFLR5 and MATLAB to set the wing geometry, then designed the wing structure in CAD.
- Sized the spar in MATLAB to hit strength and stiffness targets with **10%** less material, then laser-cut and built the wing.

EDUCATION

University of California, Berkeley · B.S. Mechanical Engineering — Dec 2025