

Sean Barbieri

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EDUCATION

University of California, Berkeley

Expected Dec 2026

Bachelor of Science in Mechanical Engineering, EECS Minor

GPA: 3.318

- Relevant Coursework: Thermodynamics, Solid Mechanics, Structure and Interpretation of Computer Programs, Three-dimensional Modeling for Engineering Design
- Current Coursework: Introduction to Nanotechnology and Nanoscience, Manufacturing and Design Communication, Engineering Mechanics II, Electronics IoT

EXPERIENCE

Morphing Matters Lab

Aug. 2024 - Present

Mechanical Engineering Researcher

Berkeley, CA

- Helped develop one of the first standardized calibration procedures for 4D printing models with research focusing on material testing of various filaments, focusing on their strength, thickness, and shrinkage behavior under activation
- Writing a research paper on calibration methods and the democratization of the 4D printing processes

CalSol – UC Berkeley Solar Vehicle Team

Jan. 2024 – Present

Chassis Member

Berkeley, CA

- Utilized Ansys to perform finite element analysis on the driver occupant cell and overall chassis, analyzing structural integrity during various crash simulations
- Designed and integrated crash structures and composite materials to optimize vehicle safety factors and minimize overall weight
- Designed a seatbelt testing rig using SolidWorks, capable of enduring stress loads of up to a thousand pounds

Hammer Space

June 2023 - Aug. 2023

Software Engineering Intern

San Jose, CA

- Collaborated to conceptualize, design, and create a fully functional Chrome extension designed to prevent procrastination amongst high school students using the pomodoro technique
- Contributed to the project by designing an intuitive and user-friendly interface with Java Script and implemented Chrome.storage to make a backend database

UCI Won Lab – Learning Interfacial & Transport Physics

Apr. 2021 - July 2022

Mechanical Engineering Research Intern

Irvine, CA

- Conducted bitmap annotation of bubble/droplets on various boiling/condensation surfaces in order to train machine vision model based in python
- Refined existing models for varying bubble detection models and helped teach/improve existing annotation methods to other lab members

Freelance Tutoring

Jan. 2020 - Dec. 2022

Self Employed

San Jose, CA

- Provided freelance tutoring to a range of 4th-10th grade students, supporting them in their online courses, including subjects such as Introductory French, Business Communications, and Sports and Entertainment Marketing
- Volunteered as a mentor for first-generation students and designed tailored lesson plans and agendas to optimize each mentoring session, enabling a more effective and focused learning experience for students

PERSONAL PROJECTS

**Autonomous Trash/Recycling Sorter, Automatic Room Light Switch, Electric Go-kart
Blackjack Bot, Mousetrap Car, LED Music Box, Wooden Trebuchet**

TECHNICAL SKILLS

Programs: SolidWorks, Ansys, Linux, , Fusion 360, Onshape, Arduino, Supervisely (Data Annotation)

Languages: Python, SQL, JavaScript, Matlab, Numpy, Matplotlib