

Reagan Bagnol

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EDUCATION

University of California, Berkeley - *B.S. Mechanical Engineering* | GPA: 3.7 *Expected: Dec 2026*

Coursework: Solid Mechanics, Fluid Mechanics, Heat Transfer, Design for Human Body, Robotic Locomotion, Manufacturing and Design, Electronics for IoT, Dynamic Systems and Feedback, Engineering Experimentation, Prototype & Fabrication

SKILLS

Software: Siemens NX | CATIA V5/V6 | SolidWorks | Onshape | Ansys Static Structural | MATLAB | Python | RobotStudio |

Manufacturing: GD&T | DFM | DFMEA | Plastic Injection Molding | Sheet Metal | CNC Machining | FDM/SLA/SLS 3D Printing |

WORK EXPERIENCE

Starlink Product Engineering Intern – *SpaceX* *May 2026 – Aug 2026*

- Designed (Siemens NX) and manufactured 5 early-stage calibration pallets and a micron-adjustable assembly fixture for first prototype user terminal dishes within a 3-week timeline, enabling initial dish functionality testing and reliability campaign.
- Redesigned the calibration pallet and fixture to incorporate automated power/data connections, eliminating 2 manual processes & reducing cycle time by 20s. Validated reliability through tolerance analysis and 1000+ cycles for high-volume manufacturing.
- Developed the production-line dish pallet with two independent locating features to enable repeatable seating into a conveyor pallet and various assembly machines, unblocking in-house manufacturing machine development.
- Performed Ansys Static Structural simulations to optimize pallet mass while meeting deflection and stress targets for various assembly processes and conducted 4 tolerance stacks to ensure repeatable dish locating across assembly machines.
- Developed two industrial dispensing systems with 4 custom paths and 30+ unique targets to automate PCBA TIM application, validating consistent TIM placement across 200+ cycles to enable startup of thermal testing for early user terminal development.

Mechanical Engineering Intern – *Formlabs* *Sep 2025 – Dec 2025*

- Developed and validated a new powder handling system that increased processing capacity by 200% and sifting speed by 45%.
- Rapidly prototyped an 18-part system via manual milling, laser cutting, 3D printing, and sheet-metal bending; analyzed data from 9+ tests in Python to validate system architecture and guide design revisions that improved handling efficiency by 30%.
- Designed 14+ sheet-metal and plastic injection-molded parts (Onshape) and drafted corresponding drawings for suppliers.
- Redesigned the electronics cooling system to ensure consistent thermal performance on a next-generation SLS printer in hot, dusty environments under tight space constraints, increasing air intake flow rate by 140% while reducing ducting complexity.
- Sourced 4 cooling/filtration components from suppliers and redesigned 10+ sheet-metal parts to improve assembly integration.

R&D Mechanical Engineering Intern – *Intuitive Surgical* *May 2025 – Aug 2025*

- Designed, prototyped, and validated a novel fluid pressurization & control assembly (SolidWorks) for a future surgical robotic system, increasing flowrates by 22% and reducing costs by converting disposable systems into reusable capital systems.
- Served as liaison between engineering and clinical teams to identify fluid parameters affecting operation performance. Built a fluids performance database by conducting 15+ flow rate tests across 8 parameters to guide future fluid architecture decisions.
- Analyzed clinical, engineering, and patient risks across each fluidic system through DFMEA and applied DFM techniques in the design of multiple mechanical components for manufacturing, assembly, and user interaction during operations.

Mechanical Design Engineering Intern – *Tesla* *Sep 2024 – Dec 2024*

- Fully designed and drafted drawings (GD&T) for an armrest frame, seat side panel, and under-seat cubby. Performed DVA calculations to ensure clash-free mounting, reduced part weight by 10%, and improved ergonomics & A-surface aesthetics.
- Identified root causes and prototyped solutions for 8+ current-production seating mechanisms & assembly process issues using 3D printing, laser cutting, & maker-space tools, advising engineers on design changes to improve reliability and assembly speed.
- Prototyped next-gen seating mechanisms, assemblies, and tools (CATIA V6) to identify & rework 15+ mechanical/assembly issues, increasing production efficiency and reducing tooling costs using SLS/SLA 3D printing, DFAM, and laser cutting.
- Modified a seat frame for carryover part compatibility through physical modifications & testing, saving \$100,000+ annually.

LEADERSHIP EXPERIENCE

External Vice President – *Engineering Solutions at Berkeley* *Aug 2023 – Oct 2025*

- Spearheaded client acquisition efforts to source 16 design engineering projects across 4 semesters for a student-run engineering consulting organization, resulting in a consistent revenue stream while delivering projects that exceed client expectations.
- Managed professional workshops, career fairs, and company panel talks, servicing 2000+ UC Berkeley engineering students.

PROJECTS

Artificial Heart – *Mechatronics Design* *Jan 2026 – May 2026*

- Engineered a magnetically transmitted dual impeller pumping system with variable flowrate controlled by user heart rate; within a heart-sized package (4"x 3"x 3"). Developed a modular testing system to measure flowrate vs. RPM and tested 10+ impeller & volute combinations to identify optimal components and RPM values to achieve 12L/min flowrate.