

JACOB FAIN

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EDUCATION

Harvey Mudd College, Claremont, CA • GPA 3.59

Expected May 2026

B.S. Engineering

Relevant Coursework

In Progress: Dynamics of Rigid Bodies • Senior Capstone • Industrial Psychology • Corporate Finance

Completed: Junior Capstone • Mechanical Design • Advanced Systems Engr. & Controls • Continuum Mechanics • Engr. Management • Applied Math for Engr. • Electronic & Magnetic Circuits / Devices • Thermodynamics • Materials Engr.

Skills

Engineering Software: SolidWorks, MATLAB / Simulink, Excel, AutoCAD, LabVIEW, COMSOL

Machine Shop / Laboratory: Lathe, Mill, Waterjet, Laser Cutter, MIG Welding, Power Tools, Oscilloscope, Soldering

Programming Languages: Python, Arduino, HTML / Markdown, SystemVerilog

ENGINEERING EXPERIENCE

Machine Shop Proctor, Harvey Mudd College

August 2024 - Present

- Training fellow students on safe and sanitary operation of various metal and wood fabrication machines. Fostering a welcoming, safe learning environment fundamental to countless student projects and experiences.
- Learning industry machines, tools, and techniques through hands-on mentorship.

Student Mechanical Engineer, Department of Water and Power, Los Angeles, CA

June 2025 - August 2025

- Drafted scope of work package detailing project background, design and procurement status, and remaining construction work needed to implement a turbine bypass line at Division Creek Power Plant in Owens Valley.
- Created a system curve and static pressure calculator to determine bypass line valve and piping specifications. Visited Division Creek and other facilities to collect measurements and redline P&ID, HVAC, and site plan drawings.
- Supported project management by documenting and diagramming ongoing tasks. Corresponded with various vendors.

ENGINEERING PROJECTS

Student Engineer, Harvey Mudd-Medtronic Clinic

January 2025 - May 2025

- Worked with 5 student engineers under Medtronic liaisons and a faculty advisor to design, fabricate, and deliver a precision O-ring lubrication solution for Medtronic's Guardian Sensor 3 continuous glucose monitoring device.
- Created prototypes in SolidWorks for safety, ergonomics, and manufacturability. Redesigned a parameterized jig from scratch to enable rapid iteration. Supported preparation of technical drawings and machining of 304 stainless steel parts.

Vice President & Mechanical Team Lead, Mudd RoboSub Club

October 2022 - Present

- Developing 2 modular autonomous underwater vehicles for the international RoboSub competition. Establishing design documentation while leading 5 students in prototyping subsystems via SolidWorks, 3D printing, and dry / wet testing.
- Designed launcher to separately fire two torpedoes, using a single servo holding springs in compression via prongs.
- Rectified and configured outdated assembly CAD. Updating vehicle design for improved machinability and buoyancy.

Structures Team Lead, Mudd Amateur Rocketry Club

September 2022 - Present

- Guiding 15 students through rocket CAD, fabrication, and assembly. Writing design and fabrication best practices, such as process routers for machining composite structural components to 0.001" tolerances via mill, waterjet, router.
- Assembled, launched, and successfully recovered a rocket at the 2025 FAR-Unlimited competition, placing 3rd.
- Developed novel bulkheads and aft airframe assembly, greatly increasing internal load transfer. Verified design through FEA. Created parachute and mounting system for a remote-control rover that would deploy on descent.