JACOB FAIN

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EDUCATION

Harvey Mudd College, Claremont, CA • GPA 3.80 Expected May 2026

B.S. Engineering

Relevant Coursework

In Progress: Mechanical Design • Engr. Clinic • Advanced Systems Engr.: Controls

Completed: Advanced Systems Engr. • Continuum Mechanics • Digital Electronics & Comp. Engr. • Engr. Management • Applied Math for Engr. • Elec. & 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.

Mechanical Engineering Intern, WePackItAll, Duarte CA June 2024 - July 2024

- Inspected 20+ packaging and assembly lines to enhance safety, sanitation, ergonomics, and operational efficiency.
- Proposed changes to E-stop button placement, which will dramatically reduce odds of severe accidents once implemented. Coordinated with technicians to minimize repetitive motion by repositioning pneumatic pumps.
- Calculated costs / savings for 7 facility-wide initiatives, from retrofitting rooms to utilizing $250,000+ in unused assets.

ENGINEERING PROJECTS

Co-Founder / Vice President, Mudd Automotive Club November 2022 - Present

- Promoting sustainability and trailblazing automotive engineering opportunities for future students. Teaching underclassmen mechanical and electrical engineering principles while garnering alumni and student body support.
- Spearheading frame design and overall assembly of a hybrid go-kart, with a $2,900 budget and scrapped / donated parts.
- Facilitating smooth operation of a club of 30+ members by managing official minutes.

Lead, Mechanical Team, Mudd RoboSub Club October 2022 - Present

- Developing 2 modular autonomous underwater vehicles for the international RoboSub competition. Leading 5 students in prototyping subsystems via SolidWorks modeling, 3D printing, mill / waterjet, and dry / wet testing.
- Designed launcher to separately fire two torpedoes, using a single servo holding springs in compression via ring.
- Rectified outdated assembly CAD. Supporting file configuration and establishing design documentation.

Assoc. Lead, Structures Team, Mudd Amateur Rocketry Club September 2022 - Present

- Guiding 15 students through rocket CAD, fabrication, and assembly for the ‘25 FAR-Unlimited national competition.
- Assembled and launched a rocket for the ‘24 FAR competition, placing 5th. Created parachute and mounting system for a remote-control rover that would deploy on descent.
- Developed novel aft airframe, greatly increasing internal load transfer. Verifying design through FEA. Writing process routers for machining composite structural components to 0.001” tolerances via mill, waterjet, lathe, router.