Caiya Coggshall

(510) 292 8838 | caiyacoggshall@gmail.com

PORTFOLIO

EDUCATION

Harvey Mudd College, Claremont, CA **GPA: 3.42, Expected *May 2026***
Bachelor of Science in Engineering , **Specialization:** Mechanical, Biomedical, Manufacturing
Good Standing: Fall 2022 - Present , Dean's List: Spring 2024 - Present
Relevant Coursework: Design/Manufacturing Engineering, Continuum Mechanics, Mechanical Design*, Microprocessor Design/Applications*, Biomedical Engineering, Digital Electrical & Computer Engineering (* 2025-2026 Academic Year)

WORK EXPERIENCE

CBM Lifemotion , Claremont, CA, *Spring Team Lead* ***August 2025 - Current***
- End-to-end design and rapid iteration of an electromechanical prototype for enhancing Extracorporeal Membrane Oxygenator (ECMO) cannulation efficiency
- Future work includes architecting system interfaces for the upcoming computer/electrical proof-of-concept: defined power/signal/data specs, selected sensors/actuators/MCU, and the bring-up & testing plan

E2 - Endovascular Engineering , Menlo Park CA, *Manufacturing Engineering Intern* ***May 2025 - August 2025***
- Designed and fabricated custom test fixtures, including a proof load tester and a 5-part assembly for a shear test study, using SolidWorks (CAD), 3D printing, and shop equipment to support validation of a Class III biomedical device
- Created detailed SolidWorks models and manufacturing drawings for production tooling, material documentation, and a protective transport case, improving assembly efficiency and enabling safe device demonstration at conferences
- Collaborated with R&D and Quality teams to develop test methods, conduct V&V and blood quality assessments (e.g. Piccolo testing), and update critical documentation (LHRs, MPIs)

Indomo Injector (Rick Bente), Claremont, CA, *Mechanical Subteam Lead* ***August 2024 - December 2024***
- Designed, prototyped, delivered a novel mechanical autoinjector for acne treatment, optimizing dosage accuracy
- Utilized CAD/3D printing to model 30+ prototypes, optimize the activation, needle cap, and skin sensor subsystems
- Refined designs within 3 months, balancing trade-offs against objectives and constraints, improving project outcomes

Harvey Mudd Machine Shop, Claremont, CA, *Machine Shop Proctor* ***August 2024 - Current***
- Instructed advanced manufacturing techniques including precision lathe operation, CNC milling, and hammer fabrication
- Trained and supervised safety and technical training for 100+ engineering students in metal and wood machine shop

Microfluidics and Biomaterials Lab (Steven Santana), Claremont, CA, *Student Researcher* ***August 2023 - December 2024***
- Operated cell culture facility with 70+ flasks, optimizing conditions to reduce variability and accelerate timelines
- Led SOP design for key equipment (e.g. Nanosight NS300), boosting reproducibility in nanoparticle analysis
- Facilitated cross-functional work that improved drug release methods and increased efficiency by 70%

Promab Biotechnologies, Richmond, CA, *Research Intern* ***May 2023 - August 2023***
- Streamlined protein purification, western blotting, and antibody staining protocols for sensor technology
- Managed 10+ cell lines, optimizing growth and preparation using engineering controls
- Used ELISA, FACS, and RTCA to support analytical tool development and cancer cell research

LEADERSHIP EXPERIENCE

Harvey Mudd Admissions Office, Claremont, CA, *External Operations Coordinator & Tour Guide* ***February 2023 - Current***
- Developed engaging training materials that improved knowledge retention among new tour guides; 97% satisfaction rate showcasing key aspects of the university experience
- Enhanced prospective student engagement by conducting over 5 tours monthly, showcasing unique academic experiences
- Strengthened external partnerships by collaborating with community organizations, leading to improved outreach

Student Senate Representative, Claremont, CA, *South Dorm President* ***August 2023 - Current***
- Elected to represent South Hall at leadership meetings, addressing $400,000 of budget and for school-wide concerns
- Helped support over 50 organizations and managed community-building events, such as jousting and karaoke, enhancing resident engagement and satisfaction through inclusive planning within the academic year

SKILLS

Machine/Precision Tools: CNC Mills, Lathes, 3D Printing (Bambu Studio, UltiMaker Cura, PrusaSlicer), Oscilloscope, Table Saw, Miter Saw, Piccolo Xpress, CNC Router, Nanosight 300, Laser Cutter (FSL PS48), Panel Saw, Bandsaws, Router Table, Planer, Jointer, Sanding/Power Tools, Soldering
Tools: 3D Computer-Aided Design (SOLIDWORKS), SEGGER, Excel, Arduino, LaTex, Sheets, Godot
Programming: MATLAB, Python, System Verilog, C, Java, GDScript