GEORGE DAVIS

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EDUCATION

Harvey Mudd College, *B.S., Electrical Engineering '26, Claremont, CA,* ***August 2022 - May 2026***

- Dean's List, GPA 3.62
- Recipient of the Harvey Mudd Merit Scholarship

WORK EXPERIENCE

Project Femto, *Johnson & Johnson Sponsored Engineering Clinic Project,* ***December 2024 - Present***

- Collaborating with a team of 5 engineers to build a mechanical and optical design for an ultra-high-speed camera and microscope to allow for the study of the laser pulse used in LASIK surgery.
- Engaging with J&J engineers in weekly meetings to align technical designs and project goals.

Teaching Assistant, *Harvey Mudd College Dep. Engineering,* ***August 2024 - Present***

- Support approximately 100 students in developing skills in writing technical lab reports during weekly writing sessions.
- Tutor students during lab hours assisting with concepts in circuit design, fluid mechanics, and microcontrollers.
- Grade problem sets for the Applied Math for Engineering course covering Dimensional Analysis, Differential Equations, Linear Algebra, Fourier Analysis, and MATLAB optimization techniques.
- Mentored ~30 students and graded lab reports in weekly labs for the Intro to Systems Engineering course — specifically with building a tethered underwater robot with temperature, depth, and proportional control systems.

Machine Shop Proctor, *Harvey Mudd College Student Machine Shop,* ***December 2023 - Present***

- Utilized expertise in the student-run machine shop by assisting peers with academic and personal projects on the lathe, mill, and various heavy machinery while promoting a safe and supportive learning environment.

Intern, *4D Optical LLC, Edmonds, WA,* ***July 2023 - August 2023***

- Collected and imaged biological samples for product demonstration in anticipation of patent evaluation.
- Beta-tested optical products, providing feedback on usability and performance, contributing to product optimization.

PROJECTS

Communication System, *Radio Frequency Circuit Design,* ***December 2024***

- Designed and implemented an RF receiver to decode a mystery signal implementing a link budget containing measured signal power, noise temperature, and power distortion products at each amplification stage.

5th-Order Lowpass Ladder Filter, *Radio Frequency Circuit Design,* ***October 2024***

- Designed a 5th-order Butterworth filter on a PCB to meet strict design characteristics relating to its quality.
- Tested knowledge of two port S parameter networks, filter tables, soldering, and Vector Network Analyzers.

Autonomous Underwater Vehicle, *Experimental Engineering,* ***March 2024 - May 2024***

- Designed and built an autonomous underwater robot with a microcontroller and custom protoboard with temperature, depth, and turbidity sensing circuits that used op-amps, an envelope detector, and a trans-impedance amplifier.
- Effectively led the team through unexpected roadblocks with troubleshooting during a short data collection period with skills in basic electrical equipment like multimeters, oscilloscopes, and breadboards/ protoboards.

Project Glare, *Shanahan Project Fund, Founder, and Treasurer,* ***September 2022 - May 2024***

- Received $15,000 worth of funding through the Shanahan Student Research Grant to lead a two-year-long optical engineering project around designing a device to reduce windshield glare.

VOLUNTEER EXPERIENCE

Prison Education Project, *Teacher and Curriculum Developer,* ***January 2023 - May 2024***

- Developed and taught a virtual intro to STEM course to Santa Maria Juvenile Hall inmates.
- Worked with several students focusing on rehabilitation while promoting their pursuit of higher education.

RELEVANT COURSEWORK

Radio Frequency Circuit Design, Electric & Magnetic Circuits/ Devices, Advanced Systems Engineering I&II, Digital Electronic & Computer Engineering, Engineering Design and Manufacturing, Principles of Computer Science

SKILLS

Programming Languages: Python, C, System Verilog, Java, Rackett, R, MATLAB, Arduino, RISC-V Assembly
Software: LTspice, 3D CAD, SolidWorks, COMSOL, AlteraQuartus FPGA, Questa, Excel, Word
Tools: Oscilloscope, Spectrum Analyzer, Vector Network Analyzer, Multimeter, Function Generator, 3D printer, Lathe, Mill