ABRAHAM ROCK

[redacted] ◆ [redacted] ◆ github.com/abe-3

EDUCATION

Harvey Mudd College *May 2027*
Bachelor of Science in Engineering, Electrical and Computer Engineering Focus
Relevant Course Work: Microprocessor Systems: Design and Application, Analog Circuit Design, Advanced Systems and Signals Engineering, Dynamics of Elastic Systems, Radio Frequencies Engineering

PROJECTS

FPGA and Embedded Systems Engineer August 2025 - December 2025
"DDRUM" Rhythm Game

- Integrated real-time audio processing, custom hardware inputs, and high-speed visual feedback to align screen visuals with audio playback simultaneously via SPI communication between MCU and FPGA

Amateur Rocketeer August 2024 - December 2025
Level 1 Certification and National Amateur Rocketry Competition

- Designed custom Level 1 Rocket for H-Motor with various 3D printed and laser cut components to teach 30+ students how to simulate and build an L1 rocket cost-effectively

WORK EXPERIENCE

Raytheon (RTX) May 2026 – August 2026
Electrical Engineering Intern *Tewksbury, MA*

- Developed a DDR3 and DDR4 memory interface testbench for a Kintex UltraScale+ FPGA using Xilinx MIG IP and Questa, verifying read/write transactions and calibration behavior in simulation
- Validated memory modules and I2C peripherals on production hardware using Teradyne's S9000 Test Station
- Automated log parsing and visualization for thousands of devices with Python and Pandas, applying statistical analysis (chi-square testing) to flag recurring failures and unstable test points

HRL Laboratories August 2025 – December 2025
FPGA Design Engineering Intern *Malibu, CA*

- Built an emulator of the Quantum Instrumentation Control Kit (QICK), enabling API testing and prototyping without physical hardware and accelerating development feedback cycles
- Designed signal generator, readout, and block memory modules in SystemVerilog; formally verified designs with SymbiYosys and integrated them with Verilator

Harvey Mudd College January 2024 – May 2025
Biomedical Engineering Researcher *Claremont, CA*

- Built a novel device to characterize mechanical properties of skin under varying strain and humidity with active control
- Automated testing with networked sensors and MongoDB data logging; built a web app to run and monitor long tests

LEADERSHIP EXPERIENCE

Student Government Director

- Organized events for 1,000+ students, coordinated with student organizations, and managed a $12,000 annual budget for campus-wide programming

SKILLS

Technological skills Git, TypeScript, C, C++, Arduino, SystemVerilog, VHDL, RISC-V Architecture, Java, Assembly, MATLAB, SolidWorks, Cadence, COMSOL Multiphysics, LabView, OpenRocket