Hannah Cutler

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Education

UC Santa Barbara — Santa Barbara, CA

Bachelor of Science (B.S.), Electrical Engineering — *Expected June 2027*

GPA: 3.72

Work Experience

Researcher, University of California, San Diego – San Diego, CA — June 2024 – Present

- Selected as one of 10 participants from across the country to conduct embedded systems engineering research in collaboration with Scripps Institute of Oceanography.
- Collaborating in 4-person team on firmware integration of sensors and Particle microcontroller unit, to collect and transmit oceanographic data in the costal surf-zone.
- Implementing Python algorithms on linux-based systems to understand the effects of spectral artifacts in the time-frequency domain on 3 different sensors.
- Prepare and maintain detailed documentation to ensure a streamlined development process.

Hardware Development Intern, Hikari Medical Technologies – Santa Barbara, CA — Jan 2024 – Present

- Utilizing iterative design process to design and improve a functional and wearable housing for the device, in order to align lens, laser diode, and sensor while keeping device dimensions under 40mm x 40 mm.
- Testing each PCB for electrical functionality and physical fit. Debugging PCB and I2C communication protocol with oscilloscope, multimeter, and other common electronics laboratory equipment.
- Communicating regularly with company co-founders to align design goals and update the design process.

Controls Hardware Member, Formula SAE – Santa Barbara, CA — Oct 2023 – Present

- Leading collaborative design of wiring harness design using RapidHarness in a team of 3. Developing manufacturing methods for a functional, reproducable, and cost-efficient wiring harness for final car.
- Translating wiring harness diagrams from software to ordering list, utilizing CAD models to ensure correct wire length measurements.
- Leveraging Fusion360 to design printed circuit boards (PCBs), combining 2-3 sensors into a board. Maintain PCB technical documentation to uphold uniformity with previous and future Gaucho Racing designs.

Leadership & Outside Experience

External Vice President, SWE-UCSB – Santa Barbara, CA — May 2024 – Present

- Contacting and maintaining relationships with 90+ companies to support club finances and networking opportunities.
- Proposing and instituting new initiatives such as SWE Tech Team @ UCSB that work to close the gender gap in engineering graduates and support our members technical growth.
- Organizing annual Evening With Industry event with 75+ participants, up to 20 sponsors, and thousands of dollars of investment.

3-Dimensional Virtual Keyboard, UC Santa Barbara, CA

- Proposed and cooperatively designed gloves with 2 integrated GPU-6050's and 5 flex sensors to calculate data feedback and play. 108 corresponding keyboard notes using an Arduino-based microcontroller.
- Arranged prototype breadboards to facilitate easy debugging. Researched, wrote, and debugged C++ over the course of 5 weeks.

Technical Skills

Python, C++, Java, Fusion360, Altium, git, electronics laboratory equipment (oscilloscopes, multimeters, etc.), soldering (reflow, brazing, and torch), Microsoft Suite, AutoCAD, bash