Hannah Cutler

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Education

UC Santa Barbara — Santa Barbara, CA

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

Work Experience

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

- Selected as one of 10 participants from across the country to conduct engineering research in collaboration with Scripps Institute of Oceanography.
- Working in a 4-person team to develop the 3rd generation Smartfin, to collect and transmit oceanographic data in the costal surf-zone.
- Implementing Python simulations to understand the effects of spectral artifacts on 3 different sensors.
- Investigate methods to register high-speed temperature changes through epoxy, fiberglass, and copper composites.

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

- Utilizing iterative design process to propose and improve a functional and wearable 3D printed housing for the device, to align lens, 3 interchangable laser diodes, and sensor.
- Designing and improving PCB and accompanying 3D printed case to best align with experimental needs. Ensure that all
- Designing and printing 3 seperate resin molds for PDMS microfluidic devices. Manufacturing microfludic devices with 2x2 channels as needed for ex

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

- Utilizing wiring harness software RapidHarness to collaboratively design and manufacture a functional and cost-efficient wiring harness for final car in a team of 3.
- 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 design best practices to uphold uniformity with Gaucho Racing designs.

Leadership 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.

Projects

3-Dimensional Virtual Keyboard

- 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 ATMega328P MCU.
- Arranged prototype breadboards to facilitate easy debugging. Researched, wrote, and debugged code in C++.

Technical Skills

Python, C++, LaTeX, Java, Fusion360, AutoCAD, Altium, through hole and SMD soldering.