Kaitlin Calimbahin

858-610-4976 kcalimbahin@ucsd.edu linkedin.com/in/kaitlin-calimbahin

Education

University of California, San Diego Expected Graduation June 2026
Bachelor of Science in Electrical Engineering

Experience

Northrop Grumman Jun 2024 - Aug 2024
Systems Engineer Intern *San Diego, CA*

- Developed an automated System Integration Checkout script in **Bash** to streamline hardware validation processes for an airborne communications gateway program, achieving a projected **annual cost savings of $25,920.**
- Led collaboration efforts between 4+ interdisciplinary teams to identify and resolve cross-functional obstacles, enhancing product development between integration and test operations, and **increasing efficiency by 70%**.
- Optimized Acceptance Test Procedures (ATP) for ground systems, **reducing the time per ATP event by 55%**.
- Directed as the lead tester for **30+ Verification and Acceptance Tests** to validate ground-to-aircraft functionality.
- Awarded monetary honors prize by the program's manager for exceptional technical aptitude, innovative problem-solving, and unwavering positive energy, which greatly contributed to the success of various teams.

Autonomous Underwater Vehicle Research, UC San Diego Oct 2023 - Present
Electrical Engineer *San Diego, CA*

- Troubleshot and repaired electronics for the Scripps Institute of Oceanography's Autonomous Under Water Vehicle (AUV), ensuring functional ocean data collection for a 30-member climate change research team.
- Collaborated as a 5-member sub-team, utilizing electronic measurement tools to **improve circuit reliability by 60%.**
- Managed AUV's power distribution board, improving turbine propulsion and ensuring a stable 2-hour power supply.
- Oversaw personnel and materiel logistics at **5+ AUV aquatic test events**, ensuring smooth, efficient task operations.

Institute of Electrical and Electronics Engineers (IEEE), UC San Diego Branch Oct 2023 - Present
Technical Chair *San Diego, CA*

- Directed technical workshops that introduced students to basic circuit components, programming principles, and soldering fundamentals to an average of **20-50 students** per workshop, **increasing student technical skills by 40%.**
- Authored a continuity library to ensure the sustainability of future workshops and success of new IEEE members.
- Led, strategized, and collaborated in team meetings, resulting in **over 5 successful technical workshops** per quarter.

Projects

Autonomous Kitty Robot | *Motion Control, Behavior Interaction, Sensor Integration, Embedded Systems Programming, C++*

- Designed and developed a modular autonomous, obstacle-avoiding robot utilizing an OLED display for reactive facial expressions and an ultrasonic sensor to detect obstacles while navigating various surroundings.
- ***Behavior Response:*** Programmed the robot in **C++** to detect obstacles, triggering dynamic facial expression changes.
- ***Motion Analysis:*** Developed an algorithm to enable the robot for adaptive navigation with a **10% collision rate.**

Dynamic Spider-Man Mask | *Micro Controllers, Sensor Integration, Embedded Systems Programming, C++*

- Assembled a 3D-printed Spider-Man mask with mechanical lenses that modify the mask's eye expressions (widening and squinting) based on user input via two infrared sensors that would activate servo motors within the mask.
- ***Micro Expressions:*** Programmed an Arduino Nano in **C++** to effectively manage lens adjustments based on real-time sensor data, enabling smooth and fluid eye expression changes with a **95% response accuracy rate.**
- ***Mechanical Design:*** Fabricated an internal control system within the mask, removing the need for external switches.

Motorized Iron Man Helmet | *3D Printing, Slicer Software, Soldering, Digital Multi-meter*

- Developed an analog-based system to utilize servos, dual relays, and switches to operate a 3D-printed Iron Man helmet with LED eyes configured to turn on and off according to the positioning of the helmet's face plate.
- ***Circuit Analysis:*** Calculated the optimal component values for LED eyes, achieving a **25% increase in brightness.**
- ***Circuit Design:*** Developed a switch-operated system for the face plate to open and close at a **100% accuracy rate.**

Skills and Interests

Technical Skills: C and C++, Python, Bash, Linux, Git, KiCad, SolidWorks, Matlab, Verilog, LTSpice, Soldering, 3D Printing
Interpersonal Skills: Active Listener, Energizing Influence to Workspace, Effective Communicator, Detail Oriented
Interests: Media Analysis, Traveling, Food Tasting, Hiking, Lifting, Running