

# SEAN WAHL

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## EDUCATION

**California Polytechnic State University - San Luis Obispo (Cal Poly)**

Bachelor of Science in **Mechanical Engineering**, December 2023

**Honors:** Summa Cum Laude

**Concentration:** Mechatronics

## INTERNSHIP EXPERIENCE

**Thermal Engineering Intern**, SpaceX - Hawthorne, CA

6/23 – 9/23

- Built basis of Starshield's program-wide demise analysis (working off of a similar Starlink analysis) to ensure that the vehicles met contractual requirements to avoid harm to people on Earth from reentry debris; gave a full-program presentation informing of demise and urging engineers to consider demisability in their designs
- Simplified Thermal Desktop model of a space laser for integration into full-satellite model to ensure thermal constraints are met; consulted with partners (internal and external) to instruct them on use of model

**Mechanical Engineering Intern**, Reliable Robotics - Mountain View, CA

9/22 – 12/22

- Designed and installed reinforcements to aircraft empennage for integration of Avionics hardware necessary for autoflight redundancy requirement
- Adapted load-sensing design to perform within space and accuracy constraints and verified its mechanical ability to meet the required margins of safety in a flight-critical system
- Constructed thermal model of electronics enclosure to inform design revisions to adhere to hardware limits and maximum operating temperatures; planned and conducted testing to observe model's accuracy

**Mechatronics Student Researcher**, Cal Poly - San Luis Obispo, CA

6/22 – 8/22

- Collaborated with two peers to model and simulate single-legged robotic hopping to lay groundwork for experimentation on test-stand, providing a learning aid to Cal Poly's Mechatronics program
- Retrofitted existing test hardware to be compliant with CAN communication and establish required electronics harnessing, enhancing setup functionality

## MECHANICAL ENGINEERING AND RELEVANT PROJECTS

**Path of Lights and Sounds ([bit.ly/3Ic03o0](https://bit.ly/3Ic03o0))**

2023

- Led a team of five over a year-long project to design, prototype, and manufacture 25 step-activated, light-up, musical tiles for a Girl Scouts' Christmas event to have a path playing "Jingle Bells"
- Iterated through several structural tile designs to make the tiles weather resistant, capable of supporting 300 pounds, and as cost effective as possible
- Designed and assembled 30 PCBs (along with 2 test versions) capable of communicating with one another, playing sound, and lighting up; tried to make them water-resistant and removable in case of rainy days; ran off of a Raspberry Pi Pico in each tile running a CircuitPython finite state machine
- Wrote and conducted test plan to validate product's adherence to designated needs
- Manufactured 28 full final tiles within 3 weeks, cumulatively contributing around 300 hours of labor
- Experienced working within the requests of a non-technical customer and designing for a diverse user group

## SKILLS

**Computer:** SolidWorks/Creo/NX/Fusion 360, MatLab/Simulink, Finite Element Analysis, Python, C/C++, Engineering Equation Solver (EES), Thermal Desktop, Maple, DAS, Jira, Confluence

**Equipment:** Mill, Lathe, Welding, Laser etching, 3D Printing, Various MCUs, Soldering, Cal Poly Yellow Tag

**Technical Interests:** Robotics, Artificial Intelligence, Renewable Energy, Environmental Health

**Personal Interests:** Golf, Hiking, Camping, Music, Games, Fitness

## ORGANIZATIONS/GROUPS

**Cal Poly Engineering Ambassadors**

Fall 2021 - Fall 2023

- Led quarterly 2-hour tours of the College of Engineering to interested parties, such as prospective students, parents, and industry sponsors.