

ELIOT WACHTEL

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Education

University of California, Santa Cruz

Bachelor of Science (B.S.) in Robotics Engineering

Minor: Electrical Engineering - Honors: Dean's list Winter 2020

Expected graduation: June 2025

Santa Cruz, CA

GPA: 3.7

Experience

Mixed Engineering Intern

Gener8

Jun. 2022 – Aug. 2022

In-person work: Sunnyvale, CA

- Wrote Python scripts to control ARM based hardware for sub-micron flexure actuation and heating element tests
- Performed data analysis and graphing on prototype test data
- Sourced components for prototyping, including outlining requirements, quoting, and purchasing a customized product
- Designed a pipe bending fixture, PCBA layouts, mounting brackets, and a cartridge holding assembly in SolidWorks
- Modeled all parts for manufacture with 3D printing, milling, and sheet metal

Electrical Lead, Research Co-Lead, Instructor, President

Slugbotics (UC Santa Cruz Robotics Club)

Sept. 2020 – Present

Remote/in-person work: Santa Cruz, CA

- Ideate, design, and develop circuits and systems using Autodesk Eagle, Fusion 360, Solidworks, Altium, and OnShape.
- Lead meetings, plan meeting agendas, and distribute tasks for sub-teams in coordination with team leadership, managing 30 people across three teams
- Develop and teach content with co-instructors as part of a university sanctioned course on the electrical design process
- Current projects involved with: MATE underwater robotics, autonomous fleet tracking, combat robotics, modular interactive event robot, and a laboratory move
- Past projects involved with: CITRIS Aviation Prize 2021, FAA Airport Design Challenge 2020
- Coordinated the design and execution of a student machine shop in collaboration with other S-lab board members

Embedded Systems Engineer and Founding Team Member

Pinpoint AVL

Nov. 2021 – Present

Santa Cruz, CA

- Design and assemble custom hardware for user input, processing, and power management
- Worked closely on a multidisciplinary team generating an alpha product and business model
- Presented a pitch deck with two others that won a \$10,000 dollar first prize in a pitch competition

Projects (more examples at eliotwachtel.com/portfolio)

Underwater Camera Ring Light System

Oct. 2021 – May 2022

- Designed a four-ring underwater lighting system to provide lighting for nocturnal operations at 15 meter depths
- Developed a system composed of a 12 to 31 volt boost converter, current regulating LED driver circuit, and 20 watt, 3,250 lumen light ring with integrated passive cooling
- Designed and documented using Autodesk EAGLE, GitLab, and Maker.io

Multi-function HID keypad

Mar. 2021 – Apr. 2021

- Designed and programmed an HID keyboard to provide easy access to frequently used keyboard shortcuts and symbols
- Function implemented using a Raspberry Pi Pico running CircuitPython
- Designed a 3D printed case and two layer PCB in Fusion 360
- Documented on GitHub and Maker.io

Technical Skills

CAD, 2D design, video editing: SolidWorks & GrabCAD, Fusion 360, Onshape, Autodesk Eagle, Altium, SketchUp, Gimp, Adobe Illustrator, Inkscape, Shotcut

Business: Microsoft Office, Google Suite, Adobe Acrobat, Slack, Kanban software, LaTeX

Programming Languages/tools: Python, Java, C/C++, HTML/CSS + JavaScript, Git, MIPS Assembly, Vivado Tcl

Machining and Shop:

Mechanical: Hands-on experience with CNC and manual machining of common metals, plastics, wood, and composites on most common wood and metal shop tools with additive, subtractive, and joining methods (including welding, riveting, threaded fasteners, bolts, and adhesives)

Electronics: Experience soldering (through hole and SMD), crimping, and using common bench top equipment

Misc: Sewing (hand, machine, and CNC), caliper measurement (digital and mechanical), and most standard workshop/maker-space hand and power tools

Bilingual (English/Conversational and Written Spanish)