Eliot Wachtel

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Education

University of California, Santa Cruz **Expected graduation: June 2025**
Bachelor of Science (B.S.) in Robotics Engineering - Minor: Electrical Engineering *Santa Cruz, CA*
Honors: Dean's list Winter 2020 *GPA: 3.7*

Experience

Mixed Engineering Intern **Jun. 2022 – Aug. 2022**
Gener8 *In-person work: Sunnyvale, CA*

- Wrote Python scripts to control hardware in categorization tests
- Performed data analysis and graphing on prototype test data from CSV files
- Sourced critical 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
- All parts designed for manufacture with 3D printing, milling, and sheet metal

Electrical Lead, Research Co-Lead, Instructor, Club President **Sept. 2020 – Present**
Slugbotics (UC Santa Cruz Robotics Club) *Remote/in-person work: Santa Cruz, CA*

- Ideate, design, and develop circuits and systems using Autodesk Eagle, Fusion 360, and OnShape
- Lead meetings, plan meeting agendas, and distribute tasks for sub-teams and team leadership, managing 30 people across three teams
- Develop and teach content 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 and managed the design and execution of a student machine shop

Embedded Systems Engineer and Founding Team Member **Nov. 2021 – Present**
Pinpoint AVL *Remote work*

- Designed custom hardware for user input, processing, and power management
- Worked closely on a multidisciplinary team generating a product and business model
- Helped present a pitch that won a $10,000 dollar first prize in a pitch competition

Projects

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
- Electrical design in Autodesk EAGLE and documented on 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

Coding Tools: VScode, IntelliJ, Arduino IDE, Google Colab, Mu, Xylinx Vivado, Git, Windows PowerShell, Overleaf
CAD, 2D design, video editing: SolidWorks & GrabCAD, Fusion 360, Onshape, Autodesk Eagle, SketchUp, Gimp, Adobe Illustrator, Inkscape, Shotcut
Business: Microsoft Office, Google Suite, Adobe Acrobat, Slack, Trello, monday.com, LaTeX
Programming Languages: Python, Java, C/C++, HTML/CSS, JavaScript, 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)