ELIOT WACHTEL

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EDUCATION

University of California, Santa Cruz

Masters of Science (M.S.) in Robotics, Controls, & Cyber-Physical Systems   *Expected Dec. 2025 – GPA: 3.87*
B.S. Robotics Engineering, Minor in Electrical Engineering   *Dec. 2024 with Honors*

EXPERIENCE

Hardware Engineering Intern   **Jul. 2025 – Sep. 2025**
Pure Storage
- Redesigned Enterprise NVMe drive to have per bus current sensing, allowing for improved power optimization
- Wrote Python script to mange sensors parallel bash scripts to collect and store NVMe test data
- Wrote Python scripts to control server hardware for PCIe and other hardware validation
- Validated power integrity and enable/disable safety functionality

Undergraduate/Graduate Student Researcher   **Feb. 2023 – Present**
Braingeneers Lab under Dr. Mircea Teodorescu
- Developed code and designed power circuit to enable per-servo control of a modular, 50+ servo system
- Ensured proper board production through two versions via direct communication with board house
- Created an abstracted library, simplifying the ability to control the device over the internet via MQTT messages
- Designed variety of non-contact sensor solutions using two and four layer PCBs to support scalable device monitoring

PMU Validation Infrastructure Intern   **Jul. 2024 – Sep. 2024**
Apple
- Designed, simulated, and validated space constrained active heat sink solution using Siemens NX and Ansys Discovery
- Verified heat-sink met power dissipation and max temp. specifications by assembling a test rig to run sustained loads
- Visualized and reported heatsink test data in slide format via graphs and Ansys flow visualization
- Detected and visualized PCB population faults by writing python algorithm to map netlist and BoM files

Electrical Systems Lead   **Jun. 2023 – Jun. 2024**
Formula Slug, UC Santa Cruz FSAE team
- Mentoring and guiding new members in electrical theory and circuit design, growing electrical team from two to 20
- Managed the design and fabrication of the high and low voltage electrical systems for an electric rally car
- Ensured individual systems could be integrated with cross-subteam coordination
- Led design review meetings and provided progress updates to team leadership

Mechatronics Engineering Intern   **Jun. 2022 – Aug. 2022, Jun. 2023 – Aug. 2023**
Gener8
- Performed data analysis and graphing for customer facing presentation on prototype test data
- Sourced components for prototyping, including outlining requirements, quoting, and purchasing a customized product
- Designed PCBA layouts, mounting brackets, fixtures and prototype geometry for subsystem validation and assembly
- Modeled parts to be manufactured via FDM & resin 3D printing, milling, and sheet metal fabrication

PUBLICATIONS

Fostering Inclusivity and Engagement while Learning by Doing ...   **Published by ASEE 2024**
- Primary author on paper demonstrating the effectiveness of student designed and taught classes in providing foundational technical instruction for first year students
- Digitally available at: https://peer.asee.org/46737

TECHNICAL SKILLS

EDA, CAD, and 2D design: SolidWorks & PDM, Siemens NX, Fusion 360, Onshape, FreeCAD, Ansys Discovery, EAGLE, Altium, KiCAD, SketchUp, Gimp, Adobe Illustrator, Inkscape
Programming Languages/Tools: Python, Java, Embedded C and C++, HTML/CSS & JavaScript, Git, Bash, MIPS Assembly, Vivado TCL, LaTeX, Linux (Redhat & Ubuntu)
Mechanical: Additive, subtractive, and joining of metals, plastics, wood, and composites (i.e. CNC, 3D printed, & Laser cut)
Electronics: EDA, SPICE, soldering, crimping, sourcing, and test equipment
Misc: control theory, sewing, metrology, and hand/power tools
Soft: Fast learner, strong communicator, capable at detail oriented planning/design both at subsystem level and system wide