

Henry Speiser

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EDUCATION

University of California, Berkeley Expected Graduation: May 2028

B.S. Electrical Engineering and Computer Science | *College of Engineering*

GPA: 3.75/4.00

PROFESSIONAL EXPERIENCE

Tesla **Palo Alto, CA**
Low Voltage Electrical Engineer *September 2025 – Present*

- Contribute to comprehensive validation of low-voltage electrical systems across sensing, communication, and comfort domains, supporting hardware sign-off for mass production.
- Design and execute automated thermal and electrical stress tests using custom fixtures, pneumatic setups, and test PCBAs to compress decade-long lifetimes into hyper-accelerated validation cycles.
- Develop automation tools and data pipelines to improve efficiency in test execution, logging, and failure analysis across hardware programs.
- Collaborate with design, reliability, and supplier teams to identify root causes, implement fixes, and close validation gaps before production.
- Deliver data-driven feedback to hardware teams, enabling faster design iteration and reducing the likelihood of future field failures.
- Gain deep understanding of end-to-end vehicle subsystem interactions and proactive failure-mode detection strategies.

SOMO AI | Hotel IoT Systems **San Francisco, CA / Mexico City, MX**
Hardware & Software Developer *April 2025 – September 2025*

- Built 12 custom PCBs as lead prototyping engineer, each validating a distinct product line prior to full-scale team investment
- Assisted \$20M+ in funding and \$1.2M in revenue by delivering investor-ready prototypes, featured in demo rooms and executive presentations
- Delivered production-ready proof-of-concepts under aggressive timelines, integrating embedded firmware, PCB design, and system validation to accelerate go/no-go decisions on hardware products.
- Adapted across diverse technologies on demand: RTOS, ESP32/Pi Pico/STM32 MCUs, sensor integration (PIR, thermal, current, mmWave, IMU), motor control (FOC), RS-485/CAN protocols, SPI/I²C/UART, and sub-GHz/GHz RF communications (OOK, 2FSK, BLE)

Atila Biosystems | Molecular Diagnostics **Sunnyvale, CA**
Electrical & Software Engineer *October 2022 – December 2023*

- Built ultra-low-cost hardware systems for virus detection, reducing costs from \$600 to \$25 while preserving PCR-level accuracy
- Designed and optimized high-efficiency printed circuit boards in Altium to control thermal cycles with precision, learning and applying design-for-manufacturability principles for the most scalable and cost-effective production
- Wrote embedded software for the custom circuit boards to manage precise thermal regulation for sensitive biological samples, ensuring fast, accurate cell amplification without compromising sample integrity or consistency
- The finalized diagnostic system was presented to the Bill & Melinda Gates Foundation, contributing to \$500,000 in funding; device is FDA-approved and nearing public release to expand affordable diagnostic devices to a broader population

PROJECTS & LEADERSHIP

FRC Team 971 (Spartan Robotics) | Competitive Robotics **Mountain View, CA**
Electrical Lead *August 2021 – June 2024*

- Designed 11+ custom printed circuit boards in KiCad to improve reliability, efficiency, and performance across competition robots
- Wrote advanced autonomous and superstructure control code, configured custom Linux environments for Raspberry Pi and Jetson Orin platforms, and integrated real-time systems including IMUs, encoders, and cameras to achieve high performance
- Developed robust, sustainable wiring diagrams and a scalable electronics architecture that powered the team to multiple regional wins, championship finals, and a consistent top-25 global ranking across multiple competitive seasons

Supersonic Rocket **Los Altos, CA**
Lead Engineer *June 2024 – September 2024*

- Built and launched a high-powered rocket that achieved Mach 1+ and reached 3,000 feet altitude, equipped with a custom altimeter, wireless launch system, and APCP fuel during controlled open-air flight tests
- Designed and fabricated a reusable converging-diverging nozzle, lightweight high-strength casing, and custom wireless ignitor PCB with built-in safety interlocks, all optimized for manufacturability, thermal resistance, and extreme mechanical stress
- Developed and tested multiple fuel formulations tailored to burn profile and chamber pressure, validating performance on a custom-built static thrust stand and matching results to physics-based simulations

SKILLS & INTERESTS

Skills: KiCad, LTspice, Onshape, Solidworks, Python, Java, C++, C, CATIA, Improvising

Interests: Ski Racing, Water Polo, Backpacking, Live Music, Photography, Travel, Breakfast