

Cole Schreiner

🔗 Checkout my biggest projects at: UserIsMissing.GitHub.io

About Me

I am a Robotics Engineering graduate from UC Santa Cruz with 10+ years of hands-on experience in microelectronics, embedded systems, and automation. I bring a strong proficiency in microcontroller programming, software development, and CAD-based mechanical design, supported by a track record of leading small technical teams to deliver unique engineering solutions. I thrive in multidisciplinary environments and am driven to build innovative, novel technologies. I'm excited to apply my technical versatility to forward thinking robotics organizations.

Education

University of California, Santa Cruz

Graduated 2026

Robotics Concentration ~ Graduated with Highest Honors

- Master of Science in Electrical and Computer Engineering
- Bachelor of Science in Robotics Engineering
- Minor in Electrical Engineering

El Camino Community College

Graduated 2022

M.E.S.A. Member

- Associate of Science in Physics
- Associate of Science in Mathematics

Technical Skills

Languages: Verilog, VHDL, Matlab, C, C++, Java, Python

Tools and Programs: AutoDesk, OnShape, SolidWorks, Git, Vivado, LTSpice, Oscilloscopes, 3D Printing, Laser Cutting

Circuit Theory: Kirchhoff's Laws, voltage and current division, op-amps, RL and RLC circuits, frequency response, filters, Bode plots, Thevenin/Norton equivalence, analog electronics, and PSpice circuit modeling

Data Structures: Trees, Heaps, Binary Search Trees, Graphs, BFS, and DFS

Engineering: Statics, Dynamics and kinematic motion of Robots, Feedback Control Systems, VLSI, Microcontroller System Design

Major Projects

Capstone - Wet-Dry Cycler (RNA Replicator) - [\[Project Link\]](#)

2024 - 2025

Project Director - Origins of Life Simulation Device

- **Objective:** Designed an automated device to simulate prebiotic wet-dry cycling, aiding RNA/DNA polymerization research and enabling cost-effective RNA synthesis for pharmaceutical applications (e.g., siRNA production)
- **Technical Expertise:** Microcontroller programming, feedback control, fluid dynamics, thermal systems, and mechanical design
- **Software Proficiency:** GUI development, automation control, and real-time data analysis
- Collaborated with biomolecular researchers to advance RNA transcription and polymerization, with potential applications in RNA-based therapies such as siRNA

Professor Piano - [\[Project Drive\]](#)

March, 2025

- Designed and developed a wearable piano teaching glove featuring piezoelectric sensors, real-time peak detection, and personalized calibration
- Integrated inertial measurement units (accelerometers and gyroscopes) to capture and analyze user movement, utilizing Euler angles for precise orientation tracking
- Led the integration of I2S audio playback for high-quality sound feedback, enhancing the user experience with immersive, real-time audio feedback

Mechatronics Robot Competition - [\[Github + Technical Report\]](#)

June, 2024

- Directed a team to integrate an embedded state machine design with custom electrical circuits and analog filters to develop a functional robot prototype
- Utilized advanced SolidWorks design techniques to create precise mechanical components and ensure seamless system integration
- Designed, built, and tested the robot under a five-week deadline before competing against 20 teams

Palos Verdes Summer Tech Internship - [\[PvNet Website\]](#)

June, 2022 – August, 2022

Project Lead - Canine Medical Analysis Sensor

- Designed and developed a medical device to diagnose future mobility issues in dogs by measuring gait variances
- Applied machine learning algorithms to 9-axis IMU telemetry and developed sensor code for efficient data collection and analysis
- Assembled electronics, soldered components, designed in AutoCAD for 3D printed housing, and tested circuitry and software
- Led a team to develop a fully functional prototype