BAILUN WU, EIT

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Education

University of California, Los Angeles (UCLA) **Los Angeles, CA**

---*B.S., Electrical Engineering* (Sept 2022 - Dec 2024)

- GPA: 3.53
- Honor: Dean's List (Good Standing)
- Relevant Course: Power System; Advanced Analog/Digital Circuit Design I II (High-Speed circuit design); System and Signal; Feedback System and Control; Data Structures/Algorithms; Machine Learning; Semiconductor Device Design; Nanotechnology & Nanoelectronics; Power Electronics; Digital Signal Processing (DSP); RF Circuitry/System; Image and Speech Processing; Communication and Wireless System; Optics and Laser

Certifications

Engineering in Training (EIT) Certification **September 2024**

---Issued by the Board for Professional Engineers, Land Surveyors, and Geologists, License **#182862**

Technical Skills

Programming Language: Matlab; Python; Embedded C/C++; SystemVerilog; LabView; LaTeX; OpenCV; Simulink; Git; MQTT; SpeechRecog; Arduino;

Software: Altium; LTspice; EAGLE; PowerWorld; Microsoft Excel, Office & PowerPoint; STM32CubeIDE; Sparkfun;

Tool: Oscilloscope/Picoscope; Function Generator; Multimeter; DC Power Supplies; STM Microcontroller; 4/20 Loop Calibrator; Soldering; VNA; Logic Analyzer;

Communication Protocols : UART, I²C, SPI, RS-485/RS-232, Modbus RTU, MQTT, HART

Work Experience

ESP Safety, Inc. **Santa Clara, CA**

---Electrical Test Engineer (Aug 2025 - Present)

- Designed, developed, tested, and integrated test equipment to aid production and troubleshooting of gas detectors
- Conducted calibration and functional testing of gas and flame detectors to validate sensor performance and response accuracy.
- Design and implement new fixtures and tooling to improve assembly efficiency and quality.
- Collaborate closely with Quality and Operations leadership to ensure compliance and readiness for scaling.

UVFAB Systems, Inc. **Remote, United States**

---Electrical Engineering Intern (Mar 2024 -Aug 2024)

- Cable & Harness designing for AC modules/Capital Equipment/Sensors/Temp Controllers, digital timers, etc.
- Design electrical/electronic engineering assemblies, layouts/schematics, and detailed drawings
- Review engineering documentation and interfacing with cross-functional teams
- Perform engineering analysis on component failures.

Engineering Projects

Solar Powered Vehicle **Los Angeles, CA**

---UCLA IEEE Project (Oct 2023 - Jun 2024)

- Power system optimization with transient circuit analysis of the embedded circuit components
- Designing and testing PCBs for solar energy harvesting and power management.
- Implementing signal processing techniques to enhance control system performance and stability.
- Conducting power factor correction analysis to improve system efficiency.

Micromouse **Los Angeles, CA**

---UCLA IEEE Project (Oct 2022 - Sep 2023)

- Designing and fabricating PCBs, integrating components via bench testing with oscilloscopes and logic analyzers.
- Developing and debugging **microcontroller(STM32-F411RE)** based FloodFill algorithms using real-time sensor data for maze-solving.
- Validating circuit performance using LTspice simulations before hardware implementation.

Electrocardiogram **Los Angeles, CA**

---ENGR 96E (Jan 2023 - Mar 2023)

- Designing circuit boards for ECG measurement with low-noise signal conditioning for accuracy.
- Developing a program using **Arduino Uno (ESP32)** to process and display ECG signals on a computer interface and **LCD**.
- Simulating analog filter designs using LTspice to optimize signal clarity and minimize artifacts.

Path Following Robot Car **Los Angeles, CA**

---ECE3 Project (Oct 2022 - Dec 2022)

- Implementing **PID control** for autonomous navigation, enabling a robotic car to complete a 3.4-meter track in 8.3 seconds.
- Using phototransistors for real-time path detection, verified sensor signals and control loop timing with oscilloscopes.
- Testing and tuning motor control signals using function generators and digital multimeters to ensure efficient operation.

Rogue Survivor **Los Angeles, CA**

---Systems Design Capstone EE180DA/DB (Sept 2023 - Jun 2024)

- Localizing the player's attack and direction using **OpenCV**'s object tracking and detection algorithms.
- Using **MQTT** for real-time transmission of game object data to control player motion.
- Leveraging an **IMU(SparkFun 9D0F)** in Arduino to control in-game player movement based on gyroscope measurements.
- Employing speech recognition algorithms to control the player's behavior in-game.