U.S. Citizen

Hasaan Haq

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EDUCATION

UC San Diego — La Jolla, CA
Bachelor of Science in Computer Engineering — *Sept. 2024 – Expected: June 2026*

Los Angeles Harbor College — Wilmington, CA
Associate's in Mathematics, and Physics; GPA: 3.97 — *Aug. 2021 – August 2024*

EXPERIENCE

Embedded Systems Engineering Intern — October 2022 – September 2024
Calpak USA, Inc. — *Hawthorne, CA*

- Developed, updated, and maintained engineering documentation (e.g., design specifications, schematics, and data sheets) to ensure project consistency and accuracy.
- Conducted component research and discovery to identify cost-effective, high-performance solutions for design projects.
- Reviewed electrical schematics for accuracy and adherence to industry standards, identifying potential improvements early in the design phase.
- Produced wiring diagrams using OrCAD Capture to streamline the production process and reduce wiring errors.
- Performed hands-on bench-testing, production testing, and firmware tasks to ensure hardware reliability and system efficiency.

PROJECTS

USB-Multi-Port Inflator | *Python*
- Assisted Principal Embedded Software Engineer in developing Python-based script to flash and test firmware for an ST Microelectronics STM32F103 ARM-Cortex M3 Microcontroller utilizing the STM32 Command Line Programming binaries, streamlining the production process.
- Independently executed firmware flashing and testing for over 1000 production level board assemblies, identifying and resolving issues relating to USB-to-UART bridge connections and GPIO pins, and improving efficiency in the testing process.
- Identified and debugged any hardware and firmware issues specifically relating to USB-to-UART bridge connection and GPIO connections to MOSFETs that switch air valve solenoids.

2100-Flo-Lab-Testing | *Reverse Engineering*
- Supported reverse engineering of I/O and communication protocols, utilizing a Salae 16-channel logic analyzer to capture and analyze UART and SPI data, leading to better understanding of device communications.
- Shadowed Principal Embedded Software Engineer in the development of firmware for an ST Microelectronics STM32F429 ARM Cortex-M4 in a medical device, contributing to key insights on optimizing communication protocols.

Zenith Alpha Automated Optical Inspection | *SMT PCB Testing*
- Operated a state-of-the-art SMT PCB Automated Optical Inspection machine that looked for solder defects relating to solder bridging, coplanarity of part body and pin leads, OCV/OCR of part markings, part absence detection, part dimension detection, etc.
- Assisted in the programming and AOI testing of single board assemblies and panelized assemblies for over Qty: 3000 assemblies and reviewed the output to improve the efficiency and accuracy of the assembly line process.

WiFi-Based LED Dimmer Module | *Firmware Development*
- Analyzed manufacturer example firmware code for the Espressif ESP32-C3 Wi-Fi microcontroller, understanding it to meet specific project requirements.
- Reviewed and interpreted the schematic of a Wi-Fi dimmer module for LED lighting boards to strategically plan firmware development, improving hardware integration and control capabilities.

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, HTML/CSS
Developer Tools: Git, VS Code, Visual Studio
Hands-On Skills: Soldering through-hole and surface mount components, bench testing, production testing