Austin Guevara

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Work Experience

Instant Care Inc., San Diego, CA

Senior Software Engineer   **September 2024 – Present**
- Managed and mentored a team of engineers while collaborating cross-functionally to define firmware architecture, performance requirements, and testing strategies.
- Architected a facility-wide mesh network, integrating products from multiple divisions and teams to ensure seamless communication and meet stakeholder requirements.
- Launched products in collaboration with customers, scaling production to tens of thousands of units sold.

Firmware Engineer   **May 2021 – September 2024**
- Directed firmware development for a USB hub that received a proprietary Sub-GHz protocol and communicated packets to the company's software. Designed and implemented real-time data processing and communication protocols, ensuring seamless data transfer.
- Developed Sub-GHz devices using a star network topology to transmit and display emergency statuses in hospitals and skilled nursing facilities.
- Spearheaded firmware development for a wearable fall detection system, using accelerometer data for real-time motion analysis, and designed low-power algorithms with robust validation protocols.
- Engineered a wireless remote trigger in medical alert systems, integrating BLE and Sub-GHz communication for reliability and minimal latency.
- Created a battery-powered security sensor to monitor door and window states.
- Built a universal transmitter board to enable customer devices to communicate with new protocols.
- Assisted in defining firmware-hardware interfaces and validating system performance through extensive testing.

Independent Contractor   **November 2023**
- Designed and prototyped an animatronic butterfly for a stage production, integrating precise motion control and embedded programming.
- Utilized rapid prototyping techniques to iterate on mechanical and electronic design for optimal performance.

Undergraduate Research Assistant   **March 2020 – May 2021**
- Sole firmware engineer for a low-cost emergency ventilator replacement. Developed embedded software to process pressure sensor data and compute real-time breathing statistics.

Education

Bachelor of Science in Mechanical Engineering   **Virginia Tech, Blacksburg VA | 2016-2021**

Certifications

Bluetooth Low Energy Fundamentals   **Nordic Semiconductor**

Skills
- **Programming Languages:** Embedded C, Python, Zig
- **Embedded Systems:** RTOS (Zephyr), bare-metal programming
- **Wireless Communication Protocols:** Bluetooth, Z-Wave, Zigbee, Proprietary Sub-GHz
- **Hardware Knowledge:** Microcontrollers (PIC, EFR, NRF), Raspberry Pi, Arduino
- **Tools & Software:** Git, SVN, Logic Analyzer, Spectrum Analyzer, Oscilloscope
- **Miscellaneous:** Firmware development lifecycle, debugging, power management, rapid prototyping, leadership, communication