Uma Arthika Katikapalli

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Github Profile

EXPERIENCE

Sofar Ocean, San Francisco CA— *Embedded HW Engineer*

MAY 2021 - DECEMBER 2025

- Spearheaded the integration of diverse water quality sensors (e.g., YSI EXO3 Sonde SDI-12) onto the Spotter platform, successfully managing firmware development and ensuring compatibility with multiple industrial protocols, including SDI-12, RS485, SPI, and UART, via the open source Bristlemouth standard.
- Drove hardware design and production readiness for the Bristlemouth Devkit PCBA, completing schematics and complex layouts in Altium Designer to establish a critical, user-friendly hardware block for ecosystem expansion.
- Designed, built, and maintained the production line's high-reliability bed of nails test fixtures (in continuous use for 4+ years). Automated hardware quality assurance (QA) and validation processes by developing robust test scripts using Python/OpenHTF.
- Authored and released comprehensive, user-facing technical documentation (including project blog posts) to facilitate partner adoption and successful integration of new sensors, ensuring a clear path to utilize the Smart Mooring Ecosystem. (e.g., Releasing the SDI-12 Integration Guide)
- Periodic crossteam collaboration between Engineering, Manufacturing, and Production, serving as the go to engineer for rapid diagnosis and resolution of critical hardware issues across the production line.

Circuits & Systems, East Rockaway NY— *Embedded Engineer*

MAY 2017 - May 2021

- Maintained and wrote new firmware features in RTOS C++ to the onboard Cortex M4 microcontroller for Arlyn Scales product line; routinely troubleshooting firmware bugs using a JTAG and releasing new firmware versions along with separate target images to production.
- Led a custom project for a virtual golfing company client right from designing a PCBA and relaying raw data in C# for integration into their software.
- Conducted rigorous testing and troubleshooted issues using test equipment like oscilloscopes, multimeters, soldering and reflow techniques.

Gen-9, Louisville KY — *Embedded Systems Engineer*

JUNE 2016 - APRIL 2017

- Developed and deployed embedded firmware in C++ for BLE Beacon peripherals, enabling indoor location tracking for our NIH/NIA funded wearable product.
- Managed full hardware integration and prototyping - sensor, battery charging, AC-DC power management. Led rigorous validation testing and hands-on troubleshooting techniques.

YouVisit, New York NY — *Electrical Engineer*

OCTOBER 2015 - FEBRUARY 2016

- Engineered and built two high-density prototype camera arrays (a 14-camera VR rig and a 6-camera 360-degree streaming rig) as the sole hardware engineer on the team. Utilized LTSpice and Cadsoft Eagle to custom-design power circuits for optimal battery dissipation and implemented synchronous control logic across all cameras.

EDUCATION

NYU Tandon School of Engineering, Brooklyn NY

AUGUST 2013 - MAY 2015

Master of Science, Electrical Engineering

SASTRA University, Thanjavur India

JUNE 2009 - JUNE 2013

Bachelor of Technology, Electronics and Communication Engineering

SKILLS

PCBA Design - Altium Designer schematics & layout, Eagle, KiCAD, LTSpice, BOM;

Embedded & Firmware - RTOS, C/C++, Python, Keil uVision, Java Studio, STMCubeProgrammer, Github, SVN;

Microcontroller families - STM32, STM32, MK64F, ARM Atmel;

Protocols - UART, SPI, I2C, RS232, RS485/RS422, SDI-12, Bristlemouth;

Oscilloscope, Saleae Logic Analyzer, Multimeters, Reflow & Soldering;

Product lifecycle - Proto, EVT, DVT, PVT; Cross Functional Collaboration, Project Planning and Release Schedules; PRD to Tech Specs