Uma Arthika Katikapalli

San Francisco CA 94158
umakatikapalli@nyu.edu
Github Profile, LinkedIn

EXPERIENCE

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

MAY 2021 - DECEMBER 2025 (**4 years 8 months**)

- Spearheaded the **integrating sensors** (e.g. water quality YSI EXO3 Sonde SDI-12) 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 layout 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** to facilitate partner adoption and successful integration of new sensors, ensuring a clear path to utilize the Smart Mooring Ecosystem.
- **Cross-functional collaboration** between Engineering, Manufacturing, and Production, serving as the go-to engineer for rapid diagnosis, **root cause analysis** and resolution of critical hardware issues across the **production line**.

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

MAY 2017 - May 2021 (**4 years**)

- Maintained and wrote new **firmware features in RTOS C++** to the onboard **Cortex M4** microcontroller for industrial weighing scales Arlyn Scales product line.
- Routinely **troubleshooting** firmware bugs using debugging tools, like **JTAG** and **SWD**, and releasing new firmware versions along with separate target images to production.
- Led a custom project for a virtual golfing company client right from **system design, developing a PCBA** that extracts values from load cells, to relay raw data 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 (**10 months**)

- 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 validation testing and iteration on design.

YouVisit, New York NY — *Electrical Engineer*

OCTOBER 2015 - FEBRUARY 2016 (**5 months**)

- 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 IDE, STMCubeProgrammer, Git, Github, SVN;

Microcontroller families – STM32, STM32, NXP K64F, ARM Cortex M-0 M-4; FTDI;

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

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

Product lifecycle – Proto, EVT, DVT, PVT; Technical User Facing Documentation, Project Planning and Release Schedules