

SNEHA KADARI

Embedded Engineer intern

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Professional Summary

Innovative **Embedded Engineer** with hands-on experience in **IoT systems** and **firmware development**. Adept at designing secure and efficient solutions using **LoRa communication** and **GPS systems**. Passionate about delivering innovative, real-world embedded solutions while leveraging expertise in tools like **Keil uVision**, **Arduino IDE**, **GitHub**, and **VS Code**.

Technical Skills

Programming Languages:

- C, Embedded C.

Embedded Platforms:

- ESP32 (ESP32-C3)
- Arduino (Uno, Nano)
- Quectel MC60 (for cellular communication)

Development Tools:

- Keil uVision, PlatformIO, Arduino IDE, Android Studio
- Proteus (Simulation), GitHub (Version Control)

Communication Protocols:

- UART, SPI, I2C, LoRa
- MQTT (for IoT communication), HTTP (for web integration)

File Systems:

- SPIFFS, LittleFS, FAT32 (for storage management)

Debugging & Testing:

- Firmware debugging.

Testing Version Control & Code Management:

- Git for version control and collaboration
- code refactoring, and versioning best practices

Professional Experience

Embedded Engineer intern

Eurth Techtronics Pvt. Ltd., Kondapur, Hyderabad | Oct 14, 2024.

Projects:

- **GPS Tracker (Embedded Firmware Engineer)**
Led the development of a **GPS tracking system**, overseeing **firmware development**, and **hardware debugging**. Implemented the firmware functionalities including LIST, 505, and RST Commands for enhanced device control and monitoring. and ensured smooth integration of GPS modules and conducted rigorous testing to ensure real-time performance.
- **LoRa-Based Data Transmission (Firmware and Hardware Engineer)**
Configured and integrated **LoRa E5** modules for **data transmission** to **LoRa gateways** and

The Things Network (TTN) server and **chirpstack**. Developed robust **LoRa communication protocols**, enabling reliable **low-power wide-area network (LORAWAN)** connectivity. Successfully integrated the system with existing frameworks, improving overall communication performance.

- **Multi-Level Security Based Device Access Control System**

I developed a **secure access control system** that utilizes **multi-tiered authentication** to ensure only authorized devices can gain access. The project includes robust **firmware** designed to maintain **data integrity** and **security**. Advanced **encryption** and **authentication protocols** were implemented to protect user access, while **secure boot** and **hardware-based security** mechanisms further enhance the system's protection.

- **Performance Analysis of Cascaded H-Bridge Multilevel Inverter using PWM.**

Focused on reducing **harmonic distortion** and improving **DC link voltage** utilization. Conducted **simulations** using **MATLAB/Simulink** to analyze system performance. Optimized **power conversion efficiency** and minimized **voltage ripple**. Implemented advanced **filtering techniques** to enhance overall system stability.

Education

- **B.Tech in Electrical and Electronics Engineering**

CVR College of Engineering, T.S | 2019–2023 | Aggregate: **79.06%**

- **Board of Intermediate Education, TS**

Sri chaitanya junior kalasala | 2017–2019 | Aggregate: **90.2%**

- **Board Of Secondary Education, TS**

Hayath nagar High School, Hayath nagar, | 2015–2016 | Aggregate: **92%**

Certifications

- **Embedded Systems Course**

VECTOR INDIA | oct 2023 – April 2024

Focused on embedded programming, **real-time systems**, and **IoT development**.

Professional Interests

- Exploring cutting-edge advancements in **IoT**, **energy-efficient embedded systems**, and **wireless communication technologies** (LoRa, 5G IoT).
- Passionate about **system optimization**, **low-power design**, and **network protocols**.

Strengths

- **Leadership**: Led a team of 5 members, managing end-to-end project delivery and cross-functional collaboration.
- **Collaboration**: Worked effectively with teams to integrate complex systems.
- **Adaptability**: Proven ability to meet deadlines and overcome technical challenges in fast-paced environments.

Declaration:

I sincerely proclaim that all the particulars mentioned above are true to my belief and I am accountable for its accuracy.

Place:Hyderabad.

Signature:(sneha.k)