

# Meghana Dadi

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## WORK EXPERIENCE

### L&T Technology Services | Embedded Firmware Developer

India, Mysore | June 2023-August 2025

- Engineered **embedded firmware** in C++ using **STM32** to enable seamless **integration** of different sensing modules in the **VS Code IDE** and worked in **RTOS(Zephyr)**.
- Led firmware for Solid State Circuit Breaker: designed sensing modules, TCC algorithms, trip logic which involves auto/manual trip.
- Built **state machine** logic for power modes, LED, gate driver, and solenoid control; completed end to end **functional testing**.
- Integrated **Wi Fi WPA3** in Digital Tri Phase Ground Relay, resolving RTC timing and secure protocol issues with QA.
- Contributed to EVerest EV charging framework on **Linux**: added modules, configured **YAML/Node RED flows**, debugged OCPP connectivity.
- Mentored** peers on Zephyr, peripheral drivers, and interrupt driven design.
- Executed comprehensive firmware **verification** and **debugging** using **ST-Link** by setting breakpoints, tracing execution flow, analyzing logic and overcame integration roadblocks and shipped the release **2 weeks ahead of plan**.

### Wipro Limited | Project Engineer

India, Hyderabad | May 2022-Jan 2023

- Completed intensive **C programming** and **problem-solving** training.
- Supported version control, **agile** processes and **cross-team collaboration**.

## TECHNICAL SKILLS

**Programming Languages:** C, C++, Embedded C. **Microcontrollers:** ARM Cortex-M, STM32U5, STM32F4 series.

**IDEs:** Visual studio, STMCubeIDE, Git, CMake.

**OS:** Linux- Ubuntu, Zephyr RTOS **Protocols & Interfaces:** UART, SPI, RS232, WIFI, BLE (Bluetooth Low Energy), MQTT.

**Hardware Skills:** Oscilloscope & Logic Analyzer usage, UART Sniffing, Power Measurement, Dock light.

**Firmware & Embedded Skills:** Secure Boot, Flash Memory Handling, Modular Firmware Design, Real-Time Scheduling, Functional Testing.

**Documentation and Debugging:** Reading Datasheets, Breakpoint Debugging with J-Link, St-Link, Code Flow Tracing.

## TECHNICAL PROJECTS

### Solid State Circuit Breaker (SSCB): Duration: 10 months, Tech Stack: STM32U5, Zephyr RTOS, C++, VS Code, STM32CubeProgrammer, West

- Engineered **embedded firmware** in C++ using STM32 to enable seamless integration of three independent sensing modules current measurement, voltage measurement and temperature monitoring module and gate driver in the VS Code IDE.
- Integrated TLE4973 Current Sensor via UART for AC/DC measurements; coded for current measurement and parameter configuration and implemented TCC (Time-Current Characteristic) calculations, trip time, and protection logic for overcurrent protection.
- Architected and validated state machine logic covering ON/OFF/Standy modes, LED indicators, gate-driver control and solenoid actuation; consolidated modules into a unified firmware and executed end-to-end functional testing.
- Developed Zephyr RTOS abstraction layers for ADC, GPIO, Interrupts, External Switches, Internal Flash and Board Overlay files.
- Led module integration, MCU pin configuration, and real-time monitoring with manual/auto trip handling.
- Executed comprehensive firmware verification and debugging using ST-Link by setting breakpoints, tracing execution flow, analyzing logic
- Enabled real-time monitoring and fault response in high-voltage environment.

### Digital Circuit Breaker (DTPG): Duration: 8 months

- Engineered a **microprocessor**-based overcurrent protection relay operated via **current transformers** (CTs), mounted on switchgears for industrial safety applications, with integrated **Wi-Fi**, **BLE**, and **RNDIS** communication interfaces.
- Analyzed system architecture and evaluated modular functionalities including LED status indicators, wireless interfaces, and controller logic to ensure seamless interoperability. Integrated Wi-Fi WPA3 in Digital Tri-Phase Ground Relay, resolving RTC timing and secure-protocol issues with QA.
- Integrated secure **Wi-Fi WPA3** connectivity, collaborating with QA to **diagnose and resolve** RTC timing discrepancies and protocol handshake failures.
- Validated RTC resolution to millisecond precision and provided **cross-functional firmware testing support**, accelerating feature verification and release readiness.

### EVerest – Open-Source Modular EV Charging Framework (Linux): Duration: 3 months

- Developed and customized a modular open-source EV charging framework, enabling **full-stack, configurable environments** through interchangeable modules and **MQTT**-based integration.
- Configured and deployed EVerest on Linux, authored new modules, YAML configurations, and system parameters to extend platform capabilities.
- Simulated and validated modules for functional accuracy in charging scenarios and resolved OCPP, Steve/Maeve configuration, and CPO connectivity issues via targeted debugging and community research.

## EDUCATION

### Dr.Lankapalli Bullayya College of Engineering | Bachelor of Engineering

India, Visakhapatnam | 2018-2022

CGPA:7.69/10

Major: Electronics and Communication Engineering

### Narayana Junior College | Secondary Higher Education

India, Visakhapatnam | 2016-2018

Score:93%

Course subjects: Maths, Physics, Chemistry (MPC)

### VT High School | High School

India, Visakhapatnam | 2015-2016

CGPA:9/10