

MOHAMMED FAYIS

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SUMMARY

Associate Embedded Software Development Engineer with 1.5 years of experience in firmware development and validation for 4G smart meters and OpenCPU-based IoT devices. Proficient in Embedded C, Quectel EC200, STM32, FreeRTOS, FOTA, and DLMS protocol. Proven track record of improving firmware reliability and driving stable field deployments.

EXPERIENCE

Associate Embedded Software Development Engineer

Mar 2025 - Present

Probus Smart Things Pvt. Ltd., Noida, India

- Developed OpenCPU-based firmware on Quectel EC200 for TCP/IP, MQTT, and DLMS-based smart meter communication.
- Built FOTA/OTA update pipeline enabling remote firmware upgrades without on-site intervention.
- Validated and optimized 4G + BLE smart meter firmware, identifying and resolving 30+ critical bugs across UART, network, and BLE layers.
- Built Python/SQL-based automated test scripts, resolving 50+ stability issues and cutting manual regression testing time by 40%.
- Performed firmware flashing, protocol testing (DLMS, MQTT), and log-based debugging using CoolWatcher, Gurux, and Aboot.

Embedded Systems Trainee

Sep 2023 - Aug 2024

Emertxe Information Technologies, Bangalore, India

- Completed intensive embedded systems training covering Embedded C, STM32, FreeRTOS basics, and hardware-software interfacing — built 3 firmware projects from scratch.

TECHNICAL SKILLS

- C, C++, Python, SQL, Shell Scripting | STM32, PIC18F4580, Quectel EC200, FreeRTOS | UART, I2C, SPI, TCP/IP, MQTT, UDP, DLMS.
- Git, STM32CubeIDE, QFlash, QNavigator, Postman, Swagger, DBeaver, Gurux | Logic Analyzer, JTAG/SWD, CoolWatcher | 4G LTE, BLE, Smart Metering, OTA (FOTA/OTAP), Firmware Validation.

PROJECTS

4G OpenCPU-Based Smart Meter Firmware Development. Developed unified OpenCPU-based firmware for 4G NIC and AMR smart meter applications with FOTA, TCP/IP connectivity, and secure server communication.

LSB Image Steganography. Implemented secure image-based data hiding using LSB encoding with key-based encryption. Technologies: C, GCC, Linux.

Car Black Box. Designed a vehicle data logger on PIC18F4580 that captures real-time speed, ignition, and event data via ADC and RTC, storing timestamped logs in external EEPROM over I2C for post-incident retrieval. Technologies: Embedded C, UART, I2C, ADC, RTC, MPLAB.

EDUCATION

B.Tech, Electronics and Communication Engineering — Aligarh Muslim University – 74.00%

2019 – 2023

Senior Secondary — AKM Higher Secondary School, Kerala — 93.33%

2016 – 2018