

MOHAMMAD SHAIK

mohammadshaikece@gmail.com | +91-7019744983

Embedded Software Engineer specializing in firmware development, real-time operating systems (RTOS), embedded system devices and IOT devices.

PROFESSIONAL SUMMARY:

- Involved in firmware development.
- Proficient in real-time operating systems (RTOS).
- Familiar with ARM architectures.
- Familiarity with embedded protocols such as SPI, I2C, UART and CAN.
- Knowledge of different hardware components like controllers, memory regions (Flash, RAM, Cache), timers, WDT, PWM, GPIO, ADC, and Security regions.
- Knowledge of understanding hardware schematics and design for resolving issues close to the hardware-software boundary.
- Demonstrated ability in hardware debugging and using tools like oscilloscopes.
- Proficient in debugging embedded applications and firmware, adept at identifying and resolving issues.
- Developed and maintained source code using version control systems (GIT).
- Dedicated effort to meticulous documentation, offering clear guidelines for setup, usage, and troubleshooting to support module integration efforts.

EDUCATION:

PDA college of Engineering, University VTU

2018 - 2022

- Electronics and Communication Engineering | **CGPA: 8.03/10**

Crescent PU College of Science

2016 - 2018

- 2PUC (Class XII) | **Aggregate: 84%**

TECHNICAL TRAINING:

Embedded Intern: Vector India Pvt Ltd | May 2023 – Feb 2024

- I have successfully completed the Advanced Embedded Systems course at Vector India, Hyderabad.
- Developed a real-time industrial fault monitoring system that utilizes IoT-based sensors to track temperature and humidity levels in industrial environments.

SKILLS:

- **Programming Languages:** Embedded C, C++, Basic of Python, Linux , GitHub etc.
- **Communication Protocols:** UART, I2C, SPI, GPIO, BLE(Bluetooth Low Energy), TCP/IP and UDP.
- **Embedded OS:** Free RTOS, Linux, Windows.
- **Software Tools:** Visual code studio, Serial port tools (Real term ,Tera term),WireShark, Keil uvision, GCC compiler.
- **Hardware Tools:** Oscilloscope, SMD Sholdering, Multimeter, Logic Debug Analyzer, RealTek RT809F Flash Programer etc.
- **Processors:** Arm cortex M55, M40, 8051, LPC2029.

WORK EXPERINCE:

Embedded Software Engineer 1

- **HOAGS Technologies India Pvt Ltd.** | Joined March 2024
(IOT based Startup Company).

Roles and Responsibilities:

- Implemented code for MCU control and UART serial communication, ensuring effective interaction between the microcontroller and external devices via serial interfaces.
- Improved system stability by implementing watch dog timer.
- Involved in optimizing code.
- Integrated compression and decompression algorithms for memory optimization.
- Managed the memory partitions for flash and RAM.
- Managed Make file compilation and focused on reducing compilation time.
- Implemented secure boot protocols for enhanced system security.
- Involved in bug fixing.
- Experienced in understanding product features and adeptly crafting positive and negative test cases to ensure comprehensive testing coverage.
- Conducted thorough testing independently, ensuring the reliability and functionality of the implemented code and module integration.
- Experienced in Over-The-Air (OTA) firmware update process for devices using Bluetooth Low Energy (BLE).
- Experience in updating bootloaders via OTA (Over-the-Air) process.
- Experience in integrating sensors like DHT22, DS18B, AQI, and more into IoT devices.
- I have experience working with memory flash partitioning.
- Experienced in BLE implementation, including both Central and Peripheral modes.
- Integrated Cloud communication solutions for GPS tracking using the Quectel EC200U module with MQTT protocol.
- Experience in optimizing power management through sleep and deep sleep modes.

PROJECTS:

1. Facility Management System.

Description: Implemented a facility management project involving a network of peripheral devices connected to a central device. Sensors attached to the peripheral devices collected data, which was transmitted to the central device via BLE. The central device then transferred this data to cloud using MQTT protocols, allowing real-time sensor data to be displayed on a dashboard. This project optimized facility monitoring and management, providing an efficient solution for real-time data visualization and control.

2. GPS Tracker.

Description: The GPS Tracker fetches NMEA sentences from GNSS module, which provides real-time location data. This Information is then transmitted to the cloud using the MQTT protocol, ensuring efficient and reliable communication. This Setup enables remote monitoring and tracking of the device's location, making it suitable for various applications such as Vehicle tracking and asset management.

3. Smart Home Climate Control System.

Description: The Smart Home Climate Control System allows users to remotely control and manage their air conditioning (AC) and fan devices through a mobile application via Bluetooth Low Energy (BLE). This project aims to provide an easy-to-use interface that integrates the operation of home cooling and ventilation appliances, allowing users to:

- **Turn AC and Fan On/Off:** Seamlessly control power states of AC and fan devices.
- **Adjust Temperature Settings:** Change the temperature of the AC unit from within the app, ensuring optimal comfort.
- **Control Fan Speed:** Adjust the fan's speed settings to enhance airflow and comfort levels.

PERSONAL DETAILS:

Name: Mohammad Shaik

DOB: 11/10/1999

Gender: Male

Blood Group: O+

Language Known: English, Hindi, Urdu.

Address: LIC Colony Jeevan Bhima Nagar Bengaluru (560075).