

VISHESH VARMA

+91 7284832679 | vsvarma02@gmail.com

Vadodara, Gujarat, India

Detail-oriented Embedded Systems Engineer with experience designing, implementing, and optimizing robust applications on both Linux and bare-metal platforms. Specialized in cross-compilation, OTA upgrade systems, and real-time firmware for IoT and consumer devices. Demonstrated impact through rapid build cycles, improved platform stability, and streamlined code management practices.

WORK EXPERIENCE

Halma India Pvt. Ltd.

Embedded Firmware Developer

Ahmedabad, Gujarat

Oct '23 – Present

- Engineered an Embedded Linux application (Qt/C++ framework), cutting system response time by 50% via multiprocessing and optimization.
- Implemented cross-compilation toolchains, reducing build times by 4x on host machine.
- Designed OTA update mechanism for storage-constrained devices without A/B partitioning, ensuring reliability under bandwidth limitations.
- Customized Device Tree Sources for custom boards based on NXP i.MX6ULL SoMs.
- Applied OOP and design patterns, reducing release iterations by 50% and bug fix turnaround by 30%.
- Debugged and optimized firmware for STM32 L-Series MCUs, improving platform stability and field reliability.
- Introduced static analysis tools (cppcheck, flawfinder) and enforced Agile + DevOps practices to improve software quality and collaboration.

Monarch Innovation Pvt. Ltd.

Embedded Firmware Developer

Ahmedabad, Gujarat

Jan '22 – Oct '23

- Architected firmware for in-house eBike platform, integrating protocols (I2C, SPI, UART) and implementing features such as multi-user profiles, BMS control, motor control, graphical interface, OTA updates, and mobile-app Bluetooth.
- Optimized libraries by trimming unused dependencies, reducing flash usage by 40%.
- Leveraged dual-core architecture of ESP32 to isolate mission-critical tasks (braking, motor control) from auxiliary features.
- Developed non-blocking drivers for concurrent peripheral data acquisition.
- Established Gitflow-based version control, set up project management workflows, and enforced code reviews/documentation for maintainable firmware development.

EDUCATION

Gujarat Technological University

BE in Electronics and Communication Engineering

Ahmedabad, Gujarat

May '22

- Completed Bachelor's Degree with a Cumulative GPA of 8.12.
- Elected Subjects: Python Programming, Embedded Systems, Computer Networks, IoT, ML.

SKILLS

Languages: Embedded C, C++, Python.

Microcontrollers & Microprocessors: ESP32, Atmel, Raspberry Pi, NXP, STMicrocontrollers.

Protocols: SPI, I2C, UART/USART, RS232, PS/2, BLE.

Technologies: Embedded Systems, IoT, Networking, FreeRTOS, Git, Qt, DevOps, STM HAL, Linux, Platform I/O.

Interests: Space, Smart Home, Tech, DnD, Internet of Things, Finance.