

Job Role: Embedded Software Engineer

Position Overview:

We are seeking a skilled **Embedded Software Engineer** to design, develop, and optimize embedded systems and firmware for our cutting-edge products. The ideal candidate will have strong experience in low-level programming, microcontrollers, real-time operating systems (RTOS), and hardware-software integration.

Key Responsibilities:

- Design, develop, and maintain embedded software for microcontrollers and processors.
- Write efficient, optimized, and reliable firmware in **C/C++** and assembly.
- Develop and integrate **device drivers, BSPs, and communication protocols** (SPI, I2C, UART, CAN, etc.).
- Work with **RTOS (FreeRTOS, VxWorks, QNX, etc.)** and bare-metal systems.
- Perform **hardware-software debugging** using oscilloscopes, logic analyzers, and JTAG.
- Collaborate with hardware engineers to ensure seamless integration of firmware and hardware.
- Optimize system performance, power consumption, and memory usage.
- Implement **secure boot, encryption, and authentication** for embedded security.
- Develop and execute **unit tests, integration tests, and automated test scripts**.
- Work with version control systems (**Git, SVN**) and CI/CD pipelines for embedded development.
- Document designs, workflows, and technical specifications.

Required Skills & Qualifications:

- **Bachelor's/Master's degree** in Electronics, Computer Engineering, or a related field.
- experience in embedded software development.
- Strong proficiency in **C/C++**, with experience in Python or scripting languages being a plus.

- Experience with **microcontrollers (ARM Cortex, PIC, AVR, MSP430, etc.)** and embedded platforms.
- Knowledge of **real-time constraints, memory management, and low-power design.**
- Familiarity with **Yocto, Buildroot, or embedded Linux** is a plus.
- Experience with **wireless protocols (BLE, Zigbee, LoRa, Wi-Fi, etc.)** is an advantage.
- Strong problem-solving skills and ability to work in a fast-paced environment.

Preferred Skills:

- Hands-on experience with **FPGA, DSP, or ASIC-based systems.**
- Knowledge of **machine learning for edge devices.**
- Experience in **automotive, IoT, medical devices, or consumer electronics** industries.

Job Type: Full-time

Location: [Specify location or Remote]

Salary: Competitive, based on experience

Role & Responsibilities:

- **Embedded Software Development:** Design, develop, and maintain embedded software for microcontrollers and processors.
- **Firmware Programming:** Write efficient, optimized, and reliable firmware in **C/C++** and assembly.
- **Hardware-Software Integration:** Collaborate with hardware engineers to ensure seamless integration of firmware and hardware components.
- **Device Driver Development:** Develop and integrate **device drivers, BSPs, and communication protocols** (SPI, I2C, UART, CAN, etc.).
- **RTOS & Bare-Metal Development:** Work with **real-time operating systems (RTOS)** like FreeRTOS, VxWorks, QNX, or develop bare-metal applications.
- **Debugging & Testing:** Perform **hardware-software debugging** using oscilloscopes, logic analyzers, and JTAG tools.

- **Performance Optimization:** Optimize system performance, power consumption, and memory usage.
- **Embedded Security:** Implement **secure boot, encryption, and authentication** for embedded security.
- **Testing & Automation:** Develop and execute **unit tests, integration tests, and automated test scripts** for software validation.
- **Version Control & CI/CD:** Work with **Git, SVN**, and CI/CD pipelines for efficient embedded software development.
- **Documentation:** Prepare technical documentation, design specifications, and workflow guidelines.

Experience Required:

- **Experience Level:** 2 to 8 years of experience in embedded software development.
- **Education:** Bachelor's or Master's degree in **Electronics, Computer Science, Embedded Systems, or a related field**.
- **Industry Experience:** Experience in **automotive, IoT, medical devices, consumer electronics, or industrial automation** is a plus.