

Megala S

Career Objective

To succeed in a challenging position, I apply my over 1+ years of experience and skills in embedded software development, design, and methodology. I am seeking opportunities where I can contribute to the company's growth while also allowing for ample personal and professional development.

Professional Summary

- Hands on experience of embedded Linux porting on architectures.
- Experience on board bring-up and Linux System Programming and device drivers.
- Hands on with Linux kernel Configuration, Compilation, Patching, Make file, creating images and Porting on Target Board.
- Experience on source code version control tool GIT & debugging tools like GDB, strace, Teraterm and ST-link debugger.
- Experience on firmware development.
- Experience on protocols like I2C, SPI and UART.
- Good understanding on Yocto build system.

Educational background

- B.E in Electrical and Electronics Engineering from Suguna College of Engineering, Anna University, 2019, 63%.
- Intermediate in Computer Science with Mathematics from Presentation Convent Hr. Sec. School, Coimbatore, Tamil Nadu Board, 2015, 68%.
- 10th Standard from Presentation Convent Hr. Sec. School, Coimbatore, Tamil Nadu Board, 2013, 85%.

Skills

Programming Languages:	C, Embedded C Programming
Tools:	Github, Yocto
Software and IDEs:	Keil Software, VS code, STM32 Cube IDE
Operating Systems:	Linux, FreeRTOS
Hardware & Tools:	TI-AM335, STM3214 with Serial wire debugger and for downloading and debugging

Project Details

Project title 1: Open Embedded OS

Duration: 5 months

Description:

To develop open embedded os (building kernel image, rootfs and bootloader) from yocto project for ARM architecture. Reduced size of initramfs and kernel size.

Roles and Responsibilities:

- Understanding yocto project's build system and its components such as Bit Bake, recipes, layers and metadata.
- Customizing kernel configurations to optimize for ARM architecture by selecting appropriate kernel features, modules and drivers to minimize size.

- Develop Recipe and BitBake files to facilitate the smooth development and configuration of software packages within the Yocto environment.

Skills:

- Hardware: Qemu Virtual machine
- Development Tools: yocto
- OS & Language: Linux and C

Project title 2: Validating on SAMA5D2 Microprocessor Family

Duration: 6 months

Description:

The primary objective of this project is to validate all modules within the SAMA5D microprocessor family. Test cases have been developed to assess various modules including the I2C controller, SPI controller, Interrupt controller, DMA controller, PIO (Parallel Input Output) and clock peripherals.

Roles and Responsibilities:

- Understand different modules by studying the reference manual.
- Understand and outline the testing procedures for each specific module.
- Develop test cases to evaluate different modules such as the PIO controller, Interrupt controller and I2C controller.
- Validate all modules within the SAMA5D family of processors.
- Document the test procedures for each module.

Skills:

- Hardware: SAMA5D
- Development & debugging Tools: GDB, i2c-tool, Saleae Logic Analyzer.
- OS & Language: Linux and C

Project title 3: Industrial Automation Control System

Duration: 6 months

Description:

This project involves developing an Industrial Automation Control System utilizing the STM32L476 (ARM Cortex-M4) microcontroller, a high-performance and power-efficient IC. The system is based on a Real-Time Operating System (RTOS), enabling real-time monitoring and control of industrial machines. Its primary function is to ensure synchronized operations and compliance with safety standards. The system effectively handles diverse tasks including sensor data acquisition, actuator control, and communication with a central monitoring station, ultimately enhancing operational efficiency and safety within industrial settings.

Roles and Responsibilities:

- Interface sensors, actuators, and communication components with the STM32F407 board.
- Develop tailored components within the RTOS to match system requirements.
- Implement resource-sharing strategies and mechanisms for fair and effective utilization of system resources among various tasks and processes.
- Design mechanisms to detect and handle system faults and errors.

Skills:

- Hardware: STM32L476
- Development & debugging Tools: STM32 cube IDE, ST-link debugger, Serial port utility.
- OS & Language: C and bare metal programming with FreeRTOS

