

PONNAGANTI PARAMESWAR RAO

Current Location: **Ahmedabad, India**

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SUMMARY:

Having 1.1 years of experience in firmware development and testing. interested to work with an esteemed and progressive organization that provides an opportunity to enhance my skills and knowledge in Embedded Systems.

PROFILE REVIEW:

- Having good knowledge and experience on “C & Embedded C” programming languages and basics of Linux.
- Experience on Controller ESP32, STM32, Arduino, LPC2129, 8051.
- Completed Embedded Systems Design and Development from VECTOR Institute.
- Experience with Communication protocols like UART, I2C, SPI, CAN, MQTT, HTTP, RS485.
- Experience in development of driver code for peripherals of embedded systems.
- Experience in Module and Integration level code development and testing.
- Having experience in software documentation.
- Basics of Bare-Metal Programming , peripheral driver development, Interrupt handling.
- Having experience on the IDEs like KEIL, STM32 CUBE, VISUAL STUDIO, ARDIUNO.
- Hands on experience in using testing tools like Multimeter and Function Generator, Signal Generator.

TECHNICAL PROFILE :

Programming Languages	C & Embedded-C, C++, BASICS OF PHYTHON.
Microcontrollers	8051, STM32, ESP32, ARDIUNO2560, LPC2129
Protocols	I2C, SPI, UART, CAN, MQTT, HTTP, RS485, RS232, TCP/IP, WIFI, BLUETOOTH.
Debugging Tools	STM32CUBE, VS-CODE, ARDUINO, KEIL.
Peripheral Knowledge	ADC, TIMERS/PWM, INTERRUPTS, WATCHDOG, DMA
Operating systems	LINUX, RTOS

PROFESSIONAL EXPERIENCE :

Embedded Developer in Rydot infotech private limited	june 2024 To Present
Real-time experience in Vector India	October 2021 – May 2022

PROJECT PROFILES :

Project#3: worked on Rydot infotech private limited.

Project	Amrit(Water Quality and Quantity Measurement system)
Client	HP(Himachal Pradesh government)
Environment	VSCODE
Programming Language	Embedded C
Role	Embedded Developer
Team Size	4
Duration	Current project – Amrit
Project Environment: MCU: ESP32 Driver: UART, I2C, SPI, LCD, GSM, SD-CARD, Driver and RS485	

Project Description:

This project involves designing an embedded system to monitor both the quality and quantity of water in real-time using ESP32. The system collects data from multiple sensors measuring parameters like pH, turbidity, temperature, and water level. Data is transmitted wirelessly to a remote server using a GSM module and MQTT protocol. The ESP32 operates in low-power mode, waking periodically to read sensors and send data. Sensor functionality and configuration (like changing slave IDs) are verified using Modpoll. The project is developed using ESP-IDF in Visual Studio Code.

Roles and Responsibilities

- **Embedded Systems Development:**
 - Design and develop firmware for ESP32 using ESP-IDF.
 - Implement deep sleep modes to optimize power consumption.
 - Develop and optimize sensor communication protocols (Modbus, UART, I2C, SPI).
- **Sensor Integration & Testing:**
 - Interface multiple water quality and quantity sensors with ESP32.
 - Use Modpoll to test sensor functionality and change slave IDs.
 - Calibrate sensors and validate data accuracy.
- **Communication & Data Transmission:**
 - Configure and integrate GSM module for data transmission.
 - Implement MQTT protocol for sending sensor data to a server.
 - Handle error detection and recovery mechanisms in communication.
- **Power Management:**
 - Control sensor power using GPIOs to reduce power consumption.
 - Optimize energy usage to extend battery life.
- **Documentation & Compliance:**
 - Document firmware development, sensor configurations, and system architecture.
 - Ensure compliance with relevant communication protocols and safety standards.
 - Let me know if you need modifications or additional details!

Project#1: Worked on Vector India.

Project	Crash detection while car is reversing using sensors by using CAN protocol
Environment	KEIL IDE, Proteus
Programming Language	Embedded C
Role	Embedded Software Developer
Team Size	1
Duration	1 Month

Project Low-Level Drivers:

Drivers: I2C, LCD, CAN

Modules: Ultrasonic Sensor, EEPROM, LCD, CAN.

Project Description:

Develop an Crash detection system using ultrasonic sensor while car is reversing to detect, protect from damage and indicate in dashboard.

Roles and Responsibilities

- Understanding Software Requirement Specifications.
- Developed Application Software.
- Involved in Design Analysis and Coding.
- Bug fixes and Testing.

EDUCATION :

Qualification	Percentage %	Board/University	Passout Year
B-Tech	61	Ramireddy Subbaramireddy Engineering College	2022
Intermediate	73	Sri Srinivasa Junior College	2018
SSC	8 CGPA	Sri Nethaji Vikas EM High School	2016

DECLARATION :

I hereby affirm that what is stated above is true to the best of my knowledge.

Yours Faithfully,
Ponnaganti Parameswar rao