

Naresh

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Professional Summary

Embedded Software Engineer skilled in C/C++, Linux, and microcontroller-based development. Designed and deployed automotive data logging and embedded communication systems using UART, I2C, SPI and CAN. Passionate about developing reliable and optimized embedded solutions.

Experience

Embedded System Trainee

Bengaluru, Karnataka

Emertæ Information Technologies

July 2024 – Sept 2025

- Designed and developed an automotive black box for real-time vehicle data logging using **microcontrollers, UART, I2C**.
- Implemented an **LSB-based Image Steganography** algorithm in C, enabling secure data embedding and extraction within digital images for embedded security applications.
- Programmed **PIC microcontrollers** for data logging, memory interfacing, and real-time event capture using **MPLAB and embedded C**.

Technical Engineer

Bengaluru, Karnataka

ABinBev

Jun 2023 – Mar 2024

- Troubleshoot and debugged automated electrical and control systems to ensure operational uptime.
- Worked with PLC panels, distribution boards, and control circuits for system monitoring.
- Prepared technical reports, logs, and breakdown analyses for preventive and corrective maintenance.
- Gained hands-on experience in fault diagnosis, real-time problem solving, and system reliability.

Projects

Academic Project: Wireless Power Transfer to Charge EV Battery and Power Management in Charging Station

- Designed a wireless EV charging system using transmitter coils embedded under the road and receiver coils in vehicles. Power transfer occurs only when a vehicle is detected; surplus solar energy is stored in a station battery, with grid supply used when solar is insufficient.

C Projects : LSB Image Steganography

- LSB Image Steganography is a software application that hides data within images using encryption techniques. The hidden data can later be retrieved through decryption.

Address Book

- Console-based application to manage contacts (name, phone, email). Skills Used: File Handling, Pointers, Functions

Microcontroller Project : Car Black Box

- A car black box, also known as an **Event Data Recorder (EDR) or dashcam**, is a device installed in vehicles to record various types of data that can be crucial in the event of an accident or incident.
- Technologies used : PIC micro-controller** and schematics, Peripheral (ex: Potentiometer, CLCD, ADC) handling by understanding data-sheets, Interrupt handling, **UART and I2C protocol (RTC, External EEPROM)**.

Skills

Programming Languages: Embedded C/C++.

Embedded Systems Development: Microcontroller programming, GPIO, Memory management, Timers, Counters, Communication Protocols: UART, I2C, SPI, CAN, Linux (Commands, System calls, Process, IPC).

Tools & Development Environments: PIC (18F4580), STM32, Linux (Ubuntu), Compilers: GCC, XC8. Development tools: Vim, MPLAB, STM32CubeIDE, STM32CubeMX.

Education

VTU University, Hassan, Karnataka

Nov 2020 – June 2023

B.Tech in Electrical and Electronics Engineering

CGPA: 7.50

Government Polytechnic Kalaburagi, Karnataka

June 2017 – Aug 2020

Diploma in Electrical and Electronics Engineering

Percentage: 81.83%

Vidya Mandir school, Sedam, Karnataka

Jun 2016 – May 2017

SSLC

Percentage: 80%