AJAY NAGIRIKANTI

Embedded Systems Developer

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SUMMARY

Recent Electronics and Communication Engineering graduate with a strong focus on embedded systems and practical experience in microcontroller programming (PIC18F) and peripheral interfacing (UART, SPI, I2C). Completed multiple projects in automation, IoT, and data processing, demonstrating solid proficiency in C/C++ and a keen problem-solving ability. Eager to apply my skills and contribute to innovative embedded solutions as a motivated fresher in the field.

SKILLS

Programming Languages: Advanced C, OOP using C++, Basics of Python.
Embedded Linux: U-boot, cross compiling, porting Linux kernel, RTOS.
Peripherals: Timers, Counters and Interrupts, PWM, GPIO, ADC, DAC
Protocols: UART, SPI, I2C, CAN
Tools & Platforms: Vim, Ubuntu, Visual Studio Code, MPLAB, Linux, Windows

EDUCATION

B.Tech, Electronics & Communication Engineering (2020-24)
Visakha Institute of Engineering and Technology, Visakhapatnam | CGPA: 7.22
Intermediate (2018-20)
Sri Gowthami Junior College, Darsi | CGPA: 8.23
SSC (2017-18)
AP Model School, Darsi | CGPA: 8.8

PROJECTS

Monitoring of Fish Pond Based on IOT and its Enhancement Production System
- Developed an **IoT-based system** for real-time monitoring of fish pond parameters (pH, temperature, dissolved oxygen).
- Integrated **automated control mechanisms** to manage aerators and water flow based on sensor data.
- Enhanced **fish health and production efficiency** through continuous monitoring and data analysis.

Car Black Box
- Developed a Car Black Box to log **real-time speed, impact, and GPS data** during accidents.
- Integrated sensors (accelerometer, GPS) with **PIC18F** for data monitoring
- Implemented **GSM** alerts to auto-send accident location via **SMS**.

Image Steganography using LSB
- Developed an **LSB Steganography tool** in **C** using file handling, bitwise operations, and pointer logic for image-based data hiding.
- Ensured **visual integrity of stego-images** while encoding/decoding messages, highlighting skills in **data processing** and **image manipulation**.

WORK EXPERIENCE & TRAINING

Embedded Software Developer Trainee – Emertxe Institute, Bangalore (July 2024 - March 2025)
- Developed real-world applications covering **Advanced C, C++ Programming, Data Structures, Linux Internals & Networking, and Micro Controllers.**
- Focused on **Micro Controller programming, debugging, and security best practices**.
- Integrated **cloud-based solutions** for scalable application deployment.

Embedded Systems Intern – HMI Engineering Services (July 2023 – Sep 2023)
- Worked on **Embedded C** with **Arduino IDE** for sensor interfacing and real-time control.
- Built and tested automation projects using **Arduino Uno/ESP32** with digital I/O and communication protocols.

KEY HIGHLIGHTS

- Proficient in **Advanced C**, **OOP in C**++, and basic **Python** for embedded applications.
- Experience with **Embedded Linux**, **U-Boot**, **kernel porting**, and **RTOS**.
- Skilled in **UART**, **SPI**, **I2C**, **CAN**, and peripheral interfacing using **MPLAB**, **Ubuntu**, and **Linux tools**.
- **Certifications:** Embedded Professionals – Emertxe Information Technologies, Advanced Embedded Systems – HMI, Job Ready Employability Skills – Wadhwani Foundation.