Hemant Gotiram Jadhav

hemantgjs25@gmail.com | 7350517829 | Pune, India | hemant0123

SUMMARY

Electronics and Telecommunication Engineer with a strong passion for embedded systems, firmware development, and problem-solving. Proficient in C, Embedded C, and microcontroller programming, communication protocols (UART, SPI, I2C, CAN), and hardware-software integration. Adept at developing efficient, reliable, and scalable embedded solutions with a proactive and analytical approach. Seeking a challenging role to apply my expertise in embedded systems design and contribute to innovative technology solutions that drive organizational success.

EXPERIENCE

Embedded Systems Course Trainee Dec 2023 - Sep 2024
Emertxe Information Technologies

- **Proficient in C and Embedded C programming** for real-time embedded applications.
- **Hands-on experience with PIC18F4580 Microcontroller**, including peripheral interfacing and firmware development.
- **Developed and implemented microcontroller-based projects**, enhancing problem-solving and debugging skills.
- **Worked with communication protocols** such as **UART, SPI, I2C, and CAN** for embedded system integration.
- **Designed and tested embedded applications** for **real-time monitoring and control systems**.

Artee Flow Controls Pvt. Ltd. Jun 2023 - Dec 2023
Graduate Trainee

- Worked on industrial automation projects to enhance system efficiency and process control.
- Contributed to the design and implementation of Human-Machine Interface (HMI) solutions.
- Collaborated with cross-functional teams for system development.

EDUCATION

Pune University 2023
Bachelor of Engineering (B.E.) in Electronics and Telecommunication - 7.7 CGPA

HSC 2018
Higher Secondary Certificate (HSC - Class XII) - 62%

SSC 2016
Secondary School Certificate (SSC - Class X) - 76.40%

PROJECTS

Handy Ventilator

- Designed and developed a **compact ventilator system** using ESP8266 microcontroller for **real-time airflow control**.
- Integrated a **real-time display** to show **airflow rates, patient vitals (heart rate, oxygen levels), and alerts**.
- Implemented a **battery-powered backup system** to ensure **continuous operation during power failures**.
- Developed a **remote monitoring system** for healthcare professionals to **track patient conditions** via IoT.
- Optimized **power consumption and efficiency**, enabling longer usage in **critical care situations**.
- **Incorporated sensor-based feedback mechanisms** to dynamically adjust airflow based on patient breathing patterns, enhancing system responsiveness and efficiency.
- Incorporated a data logging system to record patient vitals and airflow parameters for analysis and future reference.

DC Motor Speed Control

- Developed a **PWM-based speed control system** for **precise motor operation and energy efficiency**.
- Implemented **overcurrent and thermal protection** to **enhance motor durability and prevent damage**.
- Integrated a **feedback mechanism** using sensors to **maintain constant speed under variable loads**.
- Designed the system for **low-noise operation**, making it suitable for **industrial and automation applications**.
- Utilized **microcontroller-based control logic** to **enable automated speed adjustments based on load variations**.

Image Steganography

- Developed an **LSB-based steganography tool** to **securely hide text data inside BMP images**.
- Designed a **user-friendly GUI** for encoding and decoding without requiring **programming expertise**.
- Implemented **AES encryption** before embedding text to **enhance security and prevent unauthorized extraction**.
- Optimized the **image processing algorithm** to ensure **minimal visual distortion while maintaining data integrity**.
- Designed a **cross-platform tool**, making it compatible with **Windows and Linux environments**.
- **Integrated error detection mechanisms** to ensure accurate extraction of hidden text and prevent data corruption.

Car Black Box

- Developed a **vehicle monitoring system** with **GPS tracking, speed logging, and event recording**.
- Integrated **anomaly detection algorithms** to **trigger alerts for abnormal driving behavior**.
- Implemented a **real-time event logging system** for **crash detection and post-accident analysis**.
- Designed an **energy-efficient data storage mechanism** using **EEPROM and SD card modules**.
- Developed an **LCD-based dashboard** for **real-time vehicle diagnostics and alerts**.

SKILLS

- **Embedded Systems:** Microcontroller programming, Firmware development, Real-time system design, Low-power optimization
- **Programming Languages:** C, Embedded C, Python (basic)
- **Development Tools & IDEs:** Keil, MPLAB X, Arduino IDE, Eclipse, VS Code
- **Communication Protocols:** UART, SPI, I2C, CAN, RS232, Modbus
- **Peripherals & Interfaces:** ADC, DAC, Timers, PWM, EEPROM, LCD, GPIO, Interrupts

CERTIFICATE

Advanced Embedded Systems

LANGUAGES

English, Hindi, Marathi

INTERESTS

- **Playing Cricket** – Highlights teamwork and leadership.
- **Listening to Music** – Reflects creativity and interest in diverse cultures.