

DAKSHATA N. GAUTRE

Embedded software Engineer

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Location: **Pune, 411052**

Skills

- Embedded C
- Assembly Language
- Embedded system with bare metal programming
- Device Drivers
- Communication Protocols like I2C, Serial Peripheral Interface (SPI), UART, CAN, MODBUS, General-Purpose input/output (GPIOs), Standard RS232, Standard RS485
- Arduino IDE, MPLAB X IDE v6.00, MPLAB IDE v6.25
- Code composer studio
- MCU Expresso IDE
- Visual studio, STM32 Cube IDE
- MODSCAN, Expressif IDE
- Arduino Uno software
- Technical Documents
- Design software requirement document
- software development documents
- Microcontroller interfacing with WI-FI
- Bluetooth
- LoRa wireless communication
- microcontroller interface with GLCD/ TFT Display by (128*64), 7 segment Display, 16*2 LCD Display
- PIC32MM, PIC32MX, PIC16
- MSP430, STM32, LPC55S16, MKM34Z256, ESP32, ATmega256
- Real-time system integration
- UART, I2C, RS-232, RS485 communication
- ADC and DAC handling
- Environmental control system design

PROJECT

Project 1: Carbon Cutter Machine Control

Developed firmware for a PIC32-based genset emission control system using UART, I2C, RS232, ADC, and DAC. The system collects soot particles and neutralizes harmful components to reduce environmental impact.

Project 2: e-Smart Temperature Monitor Controller (TMC)

Designed a temperature monitoring system with NTC sensor, 7-segment display, and dual relay outputs. Implemented over-temperature protection and keypad-based configuration for alarms and safety alerts.

Project 3: Military Vehicle Project

Basic understanding of CAN communication protocol, J1939 standard, PGN/SPN **configuration**, and ECU communication. Worked on military vehicle project using Power Vision software from Enovation Control. Gained foundational knowledge in application development for vehicle control and diagnostics.

Summary

Embedded Firmware Engineer with 4 years of experience in bare-metal programming, device drivers, and embedded C. Skilled in working with PIC, MSP430, ESP32, STM32 and other microcontrollers, and experienced in protocols like UART, SPI, I2C, MODBUS, and RS485. Proficient in tools like MPLAB IDE, Code Composer Studio, MCU Expresso IDE and ESP-IDE.

Education

Government College of Engineering, Nagpur

Bachelor of Engineering (B.E.) in Electronics and Tele.

CGPA: 82.5%

Nagpur

2020

Government Residential Women's Polytechnic, Yavatmal

Diploma in Electronics and Telecommunication, CGPA: 84.35%

Yavatmal

2017

Mahila Vidyalaya, Yavatmal

Secondary School Certificate (S.S.C.), CGPA: 80.20%

Yavatmal

2014

Experience

UNI-TECH Automation Pvt. Ltd Pune

Engineer-R&D 2023

- Designed and implemented firmware for microcontroller in embedded c.
- Contributed technical skills to support new product development and existing product maintenance.
- Performed code reviews and continuous integration to maintain code quality and facilitate collaboration.
- Implemented communication protocols such as SPI, I2C, UART, CAN for microcontroller based systems.
- Developed embedded software for high-performance, real time control systems.
- Coordinated testing and validation procedures through software development lifecycle.
- Bare metal programming with embedded C.

YELSONS INDIA Pvt. Ltd Pune

- Prepare and maintain Design Development Documents (DDD) to outline architectural and functional aspects of embedded systems.
- Create detailed Software Requirement Specifications (SRS) to define system functionality, performance criteria, and interface requirement.
- Develop and integrate device drivers for seamless communication with various interfacing hardware components.
- Work with communication protocols to interface microcontrollers with peripheral devices, ensuring efficient data transfer and synchronization.
- Conduct White Box Testing to validate internal logic, control flow, and code structure, ensuring robust and error-free software functionality.

MITSUBISHI INDIA Pvt. Ltd Pune

- Understand and interpret technical datasheets to support design and development.
- Assist in preparing design and development documentation for embedded systems.
- Learn and implement UART communication with microcontrollers.
- Support embedded code development and debugging using C.
- Collaborate with hardware and software teams for system integration and testing.