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PROFESSIONAL SUMMARY:

Highly motivated Embedded Software Engineer with 1+ years of experience in software development and testing for Embedded Systems in Automotive and IoT domains. Proficient in developing firmware for microcontrollers using C, Embedded C, and Python. Strong experience in sensor integration, optimizing code for performance, and collaborating with cross-functional teams to deliver reliable systems.

KEY SKILLS:

- Programming: C, Embedded C, Python
- Microcontrollers: STM32F103C8T6, STM32F446RE, Arduino
- Sensor Integration: BLE Sensors, IMUs (BNO055), Motor Drives
- Communication Protocols: I2C, SPI, UART, CAN, BLE, RS232, RS485
- Tools: Keil, STM32CubeMX, Visual Studio, PyCharm
- Operating Systems: Windows, RTOS

EXPERIENCE:

Surinova Pvt. Ltd., Chennai | September 2023 – Present

- Developed and optimized embedded firmware for STM32-based systems, improving system response time by 20%.
- Programmed real-time applications in C/Embedded C to ensure robust and efficient performance.
- Integrated and tested sensors (BNO055, BLE modules) and communication protocols (I2C, SPI, UART, CAN), enhancing device reliability.

PROJECTS:

T Rover Automated Tea Plant Pruning System

- **Developed firmware** for STM32 microcontrollers to control motor drives and sensor modules, enabling autonomous navigation of the pruning robot.

- **Integrated the BNO055 IMU sensor** for precise orientation and positioning, ensuring the rover maintained accurate movement during pruning tasks.
- **Programmed motor control algorithms** in Embedded C, optimizing the rover's movement and pruning precision, ensuring a smoother and faster operation.
- **Implemented sensor calibration techniques** to ensure high accuracy in varying environmental conditions, enhancing system reliability.
- **Optimized system performance** for low power consumption, resulting in longer operational time and improved battery life for outdoor usage.
- **Tools & Technologies:** Embedded C, STM32F103, BNO055 IMU, SPI Encoders, Motor Drives, EEPROM.

IoT-Based Energy Meter with Home Automation

- **Developed firmware** for ESP32 using Arduino IDE to enable real-time monitoring of energy consumption with voltage and current sensors (ZMPT101B).
- **Implemented control algorithms** to automate appliance switching based on energy usage, improving energy efficiency by minimizing wastage.
- **Designed a user interface** on a 16x2 LCD to display real-time energy data and appliance control status, enhancing user interaction.
- **Integrated Wi-Fi and MQTT protocol** to enable remote monitoring and control of devices through a mobile app, allowing users to manage energy consumption from anywhere.
- **Tested and optimized system** to ensure reliable performance, including real-time data sync with cloud storage for historical energy analysis.
- **Tools & Technologies:** ESP32, Arduino IDE, ZMPT101B Voltage Sensor, 4-Channel Relay Module, 16x2 LCD, MQTT Protocol, Cloud Integration.

EDUCATION:

2021-2022 (M.Tech, Computer Science and Engineering - University College of Engineering Kakinada, JNTUK)- Aggregate 81%

2016-2020 (B.Tech, Computer Science and Engineering - Vikas Group of Institutions, Vijayawada)- 73%.