

MANUPRAKASH SINGH

Personal Details

Phone : 8416835869 Email : msprakash0012@gmail.com Address : Sector-12, Gurgaon, Haryana.

Professional Summary

Embedded Systems Engineer with hands-on experience in firmware development and validation, microcontroller programming (STM32, Renesas), and hardware-software integration. Proficient in C/C++, Linux, and real-time communication protocols including UART, I2C, and SPI. Passionate about delivering robust embedded solutions and optimizing system performance for real-world applications.

Experience

Firmware Developer – R&D.

HPL Electric and Power Ltd.

 Sep 2024 – Present

- Developed embedded firmware in C for STM32 and Renesas MCUs.
- Worked with GPIO, ADC, UART, and timers for sensor interfacing.
- Used STM32CubeIDE and Renesas for coding and debugging.

Graduate Engineer Trainee.

Exicom Tele-Systems Ltd.

 Jul 2023 – Sep 2024

- BMS testing for State of Charge (SOC) and State of Health (SOH) estimation under various load conditions.
- Integrated NTC thermistors via ADC for real-time thermal monitoring and protection.
- Flashed firmware via CAN protocol and validated system functionality using CANalyzer.

Education

Course / Degree	School / University	Grade / Score	Year
B. Tech(ECE)	AKTU University Lucknow	85.1	2019-23
Intermediate	State Board	65	2017-19
High School	State Board	80	2017

Skills

- **Programming:** C/C++, Python, Shell Scripting.
- **Tools:** Git, Linux, AWS, STM32CubeIDE, Keil, Proteus, Arduino IDE.
- **Microcontrollers:** STM32, ARM Cortex, 8051, ESP32.
- **Protocols:** UART, I2C, SPI, TCP/IP, UDP, OSI Model, IS16444.
- **Concepts:** Memory Mangement, ADC, DLMS/COSEM, IS15959.

Projects

Light-Based potentiometer Control Using STM32.

- Developed firmware using STM32CubeIDE, STM32CubeMX, and HAL drivers.
- Configured and tested ADC-based input and GPIO output control.
- Debugged using USB-to-TTL converter, serial communication, and onboard LEDs.

Bitcoin Price Display.

- Implemented an ESP32-based system to display live Bitcoin prices on an LCD.
- Integrate External API for real-time data fetching. **Tools used:** ESP32, LCD, UART, REST API.

Home Automation (IoT).

- Developed a Bluetooth-based system to control home appliances via Android app.
- **Tools used:** Arduino, HC-05 Bluetooth, Relays, Sensors, Arduino IDE, Gits.

Certification

- **Embedded Systems Design** – Pantech.ai.
- **Cloud Computing Training** – Coursedeck Education.