

Roshan Shrivastav

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PROFESSIONAL SUMMARY

- Embedded Software Engineer with experience in developing real-time firmware solutions using STM32 and ESP32 platforms. Proficient in C/C++, FreeRTOS, and low-level driver development. Hands-on experience in CAN, SPI, UART, and I2C communication protocols, along with wireless technologies like NRF24L01 and Wi-Fi. Adept at building automation and IoT systems for real-world industrial applications.

EXPERIENCE

BEST AUTOMATION | EMBEDDED SOFTWARE ENGINEER Jan 2024 – Present

- Designed and developed firmware for automation systems using STM32 and ESP32 microcontrollers.
- Built projects involving sensor data acquisition, motor control, and IoT communication over Wi-Fi and Bluetooth.
- Optimized communication stacks (CAN, I2C, SPI, LIN), reducing data latency by 20% in critical systems.
- Used STM32CubeIDE for code generation, peripheral configuration, and real-time debugging.

PROJECTS

SMART RACK | PROJECT LEAD July 2024 – Sept 2024 | Stm32 CAN

- Built a smart inventory tracking system with STM32F746ZG (master) and STM32F042K6 (slave) over CAN bus.
- Integrated weight sensors for real-time object counting and automated stock monitoring.

ITEM LIFE | PROJECT LEAD Sept 2024 – Oct 2024 | NRF24L01, STM32

- Developed an RFID-based inventory management system to monitor item shelf life, calibration schedules, and preventive maintenance.
- Implemented a wireless data transfer solution using STM32 and RFID technology for real-time updates.

X-Y MOVEMENT OF CAMERA | PROJECT LEAD Dec 2024 – Jan 2025 | ESP32, Web Interface, IoT

- Created a remote-controlled camera system using ESP32, enabling X-Y movement via a web interface.
- Configured ESP32 as a server, providing real-time motor control with low-latency wireless communication.

EDUCATION

SANT GADGE BABA AMRAVATI UNIVERSITY

BACHELOR IN ELECTRONICS AND TELECOMMUNICATION ENGINEERING
Aug 2019 – Jun 2023
GPA: 6.93

SKILLS

PROGRAMMING LANGUAGES

C/C++ (Advanced)
Python
Embedded C
Embedded C++

EMBEDDED SYSTEMS

RTOS (FreeRTOS)
Firmware Development
Microcontroller Programming (STM32, ESP32, EFR32, Arduino)
Bare-Metal Programming
Low-Power Embedded Systems

COMMUNICATION PROTOCOLS

CAN, LIN, SPI, I2C, UART, USB, MODBUS, TCP/IP, UDP

DEVELOPMENT TOOLS

STM32CubeIDE, Keil, Arduino IDE

WIRELESS & IOT

RFID, NRF24L01, Wi-Fi, Bluetooth (BLE), LoRa, Zigbee
Cloud IoT: AWS IoT, Google Cloud IoT

COURSEWORK

TRAINING

Completed Advance Embedded System course form Vector India Private Limited

LINKS

LinkedIn:// Roshan Shrivastav