Chirag rajpurohit

Firmware engineer

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PROFESSIONAL SUMMARY

Firmware Engineer with 1+ years of industry experience in embedded systems, IoT projects, and microcontroller development. Skilled in developing, testing, and optimizing embedded solutions using C, Python, communication protocols, and real-time operating systems. Experienced in integrating sensors, developing data acquisition solutions, and applying modern debugging techniques. Passionate about learning new frameworks, collaborating in cross-functional teams, and driving reliable embedded product delivery.

CORE TECHNICAL SKILLS

Programming Languages: Python, Embedded C, Perl, Shell scripting, C++

Development Boards: Raspberry Pi, Arduino, STM32F103C6T6A, ESP32, STM32F407G DISK-1

Software/IDE: STM32cubeIDE, Arduino-IDE, Keil-uVision5, Jira, Slack, Linux, Linux kernel (basic), Power-BI, MongoDB, Github, freeRTOS

Communication Protocols: UART, SPI, I2C, TCP/IP, WIFI-DIRECT, CAN, MODBUS, MQTT

Non-Technical Skills: Punctuality, Adaptability, Problem Solving

PROFESSIONAL EXPERIENCE

Pronesis Technologies Pvt Ltd, Ahmedabad

January 2025 – Present Design Engineer in Embedded domain
Ahmedabad, India.

July 2024 – December 2024 Embedded Engineer Intern
Ahmedabad, India.

- Develop, test, and optimize embedded solutions using microcontrollers, communication protocols, and real-time operating systems.
- Continuously learn new technologies and frameworks in the embedded and IoT space, emphasizing practical implementation and innovation.
- Interfaced temperature and gas sensors with Raspberry Pi for real-time data acquisition, storing data in MongoDB, and visualizing insights using Power BI and D3.js.
- Hands-on experience with AWS IoT, Linux, FreeRTOS, and developed applications using C, C++, Python, and Perl.

Episodics Labs Pvt Ltd, Ahmedabad

Embedded System Engineer | January 2024 – June 2024

- Integrated Panasonic PAPIR sensor and camera module with Raspberry Pi, enabling seamless device connectivity via Wi-Fi Direct, TCP/IP socket, and I2C protocols.
- Utilized Linux and shell scripting for real-time data exchange and system control, enhancing system functionality and communication efficiency.

PROJECTS

ESP32 Based Patient Monitoring Device

- Designed and developed a monitoring system integrating TCAM-Mini thermal camera and C1001 mmWave sensor to detect falls, immobility, and temperature anomalies, featuring real-time geo-fencing with TensorFlow Lite.
- Implemented MQTT communication with Python backend over AWS IoT, enabling RGB/thermal video capture, remote configuration, and OTA updates for alert-driven monitoring.

Stump Camera with Raspberry Pi Zero 2W

- Built a wireless camera system using Raspberry Pi, enabling video capture and transmission to a custom Android app with synchronized multi-camera communication via Wi-Fi Direct.
- Integrated PIR sensor and implemented recording triggers, gaining hands-on experience in Linux services, shell scripting, camera configuration, and Python system control.

COURSES AND CERTIFICATIONS

- Mastering RTOS: Hands on FreeRTOS and STM32Fx with Debugging (Udemy)
- Embedded C (Pantech University)

EDUCATION

Bachelor of Engineering (B.E) in **Electronics and Communication Engineering (ECE)** from Vishwakarma Government Engineering College (7.64 CGPA)

DECLARATION

I hereby declare that the above-mentioned information is correct to the best of my knowledge and I bear responsibility for the accuracy and correction of the above details.