

Name: Rajat Kumar

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OBJECTIVE

Highly motivated Embedded Engineer, who is passionate about making new devices and eager to learn new things, having good understanding of embedded software designing , looking for new opportunities and new learning.

WORK EXPERIENCE

12/2021 - Present

National Commodities Management Service Ltd. Gurgaon, Firmware Developer:

- Collaborated with cloud and hardware engineers to develop complete embedded solutions.
- Developed firmware for in-house AWS boards, created high performance data logger boards with greater than 99% uptime.
- Managing installation, upgrade and deployment of projects and providing on-site direction for field engineers.

2/2020 – 11/2021

Techatronic , Delhi Tutour and Freelancer:

- Developed firmware for student projects.
- Trained college student about embedded system and IOT.
- Built many projects containing Arduino, Raspberrypi, Esp32

7/2018 – 12/2018

CSIR-Central Electronics Engineering Research Institute, Pilani Research Trainee:

- Designed and developed a C++ based firmware for high precision Automatic Jewelry Stone Grinding Machine.
 - Designed PCB board using proteous software for controlling 6 DOF Arm, board containing 6 Atmega328p IC, all controlled using I2C protocol.
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SKILLS

FreeRTOS, Windows, Linux, Raspbian os
Programming language- Embedded C, C++.
Embedded Framework- ESP IDF, Arduino IDF, PlatformIO.
Hardware-Atmel series, ESPressif SOC, STM, PCB schematics.
Development Boards- Raspberry pi, Arduino, Bluepill, ESP32.
Protocols- UART,CAN, I2C, SPI, RS232, HTTP, MQTT.

Projects

Commercial Weather Station

Team size: 6

Role: System Requirement analysis, Firmware Development, Testing.

- Developed ready to deploy firmware for Automatic Weather Station.
- Firmware coded in C++, Microcontroller: ATmega2560.
- Feature of the firmware: HTTP data uploading on the server, 2G connectivity, I2C and SPI protocols for sensor reading, Data saving on SD card, RTC function for time.

Forest Fire Detection using Wireless Sensor Nodes

Team size: 2

Role: Prototyping, Firmware Development, PCB designing and Testing.

- Using sensor data we can early notify forest fire, develop a wireless standalone board having battery and solar both.
- The board had one atmega328p, SIM900 for wireless comm. DTH22 for temp and humidity, Mq9 as Carbon monooxide sensor.
- IF sensor value goes up to threshold value(calculated in fire situation) a notification sent to all authorities.

EDUCATION

- **B.TECH in Electronics Engineering**
Institute of Engineering and Rural Technology
2015- 2019