

Gagan Kumar

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SUMMARY

Aspiring Electrical and Electronics Engineer specializing in embedded software development, with hands-on experience in developing and testing firmware for microcontroller-based systems. Skilled in troubleshooting and improving code quality, while working closely with hardware teams to achieve seamless system integration.

EDUCATION

Bachelor of Engineering

Minor in Electrical And Electronics Engineering • UIET Chandigarh • Chandigarh • 2024 • 6.54

Higher secondary education (HSC)

Minor in PCM • B.R.N.K.S College • Kalyanpur • 2019 • 73.20

Secondary School Certificate (SSC)

High School Abhyudaynagar • Banka • 2017 • 73.80

EXPERIENCE

Jr. Embedded Developer & Technical Support

RyDot Infotech Pvt. Ltd.

July 2024 - Present, Ahmedabad

- Developed and tested embedded firmware for microcontroller-based systems, ensuring functionality and reliability.
- Collaborated with hardware teams to debug and integrate hardware-software interfaces effectively.
- Leveraged AI tools to enhance development efficiency, troubleshooting, and code quality.
- Provided technical support to diagnose and resolve hardware/software issues in embedded systems for clients and end-users.

SKILLS

Programming Languages: ESP-IDF, C Programming, Embedded C Programming, Basic C++

Embedded Controllers: Analog I/O's, Memory Usage, Interfacing, Character LCD, Peripherals Usage (ADC, LED, Timers, EEPROM, Keypad, Interrupts)

Communication Protocols: UART, SPI, I2C, CAN, RS485, HTTP, MQTT

Operating System: Linux (Ubuntu)

PROJECTS

Smart Water Quality and Quantity Monitoring

RyDOT Infotech Pvt. Ltd. • July 2024 - Present

- Project Overview:** Developed an RTOS-based system for real-time water quality and quantity monitoring, measuring parameters like pH, turbidity, and flow to prevent wastage. The project enhances water management, sustainability, and health in industrial and residential applications.
- Technologies Used:** ESP32, RTOS, ESP IDF, pH Sensors, Turbidity Sensors, CL Sensors, Flow meter, GSM, IoT, ADS1115.
- Key Challenges & Learning:** Learned data conversion techniques and bit manipulation to handle sensor data efficiently. Overcame challenges in calibration and real-time monitoring, enhancing expertise in embedded systems and IoT.

Gas Leakage Detection System

UIET, Panjab University • August 2023 - November 2024

- Project Overview:** Developed a gas leakage detection system with Arduino Uno for real-time monitoring and SMS alerts, enhancing safety. The system auto-activates exhaust fans upon detecting hazardous gas levels, reducing incidents by 60%.
- Technologies used:** Arduino Uno, MQ2 Gas Sensor, GSM Module, Relay, Embedded C, Arduino IDE.
- Key challenges & learning:** Encountered challenges in minimizing false alarms due to environmental noise. Learned effective circuit design, modular coding, and debugging techniques to ensure smooth operation and reliability.

Solar Powered Wireless Electric Vehicle Charging Station

UIET, Panjab University • January 2024 - May 2024

- Project Overview:** Developed a solar-powered wireless charging station for electric vehicles, converting solar energy into electrical power. The project promotes renewable energy to providing an eco-friendly alternative to traditional charging.
- Technologies used:** Solar Panels, Inductive Charging Coils, Power Electronics, Circuit Simulation Software.
- Key challenges & learning:** Struggled with ensuring system efficiency under varying solar conditions. Designed and simulated power electronics circuits for efficient energy conversion.