

# KSHITIJ GUPTA

Himachal Pradesh, India

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## Summary

IoT and embedded systems engineer with hands-on experience in ChirpStack (LoRaWAN), Node-RED, and Docker for end-to-end IoT deployments. Skilled in Raspberry Pi integration, MQTT-based data pipelines, and containerized services. Experienced in real-time monitoring and visualization using Grafana.

## Education

**University School of Studies, Himachal Pradesh Technical University**

*Bachelor of Technology in Computer Science & Engineering*

**Jul. 2023 – Jul. 2026**

*Himachal Pradesh, India*

**Government Polytechnic Sundernagar**

*Diploma in Computer Science Engineering*

**Aug. 2019 – Jun. 2022**

*Himachal Pradesh, India*

**B.L. Central Public School, Karsog (CBSE)**

*Secondary School (Class X)*

**May 2018 – May 2019**

*Himachal Pradesh, India*

## Experience

**Research Intern – IoT & Healthcare Systems**

*Indian Institute of Technology (IIT) Mandi*

**Jun. 2025 – Present**

*Himachal Pradesh, India*

- Developed IoT-based non-invasive healthcare monitoring systems using Raspberry Pi and sensors.
- Implemented LoRaWAN communication using ChirpStack for secure device provisioning and data transfer.
- Designed real-time data pipelines using Node-RED and MQTT.
- Visualized data using Grafana with InfluxDB and services via Docker containers.

**Technician – Computer Engineering**

*Directorate of Technical Education*

**Sep. 2022 – Aug. 2023**

*Sundernagar, Himachal Pradesh*

- Provided technical support for computer hardware, operating systems, and lab infrastructure.
- Assisted in system troubleshooting, installations, and basic network configuration.

## Projects

**LoRaWAN Data Collection System using ChirpStack**

*IoT & Network Systems Project*

**Present**

*India*

- Developing a LoRaWAN-based sensor data acquisition system using LoRa modules.
- Configured ChirpStack on FreeBSD and Raspberry Pi for gateway and device management.
- Implemented MQTT-based uplink data handling using structured JSON payloads.

**IoT Bazaar – Android Full Stack Application**

*Android & Backend Project*

**2025**

*India*

- Built a full-stack Android app using Jetpack Compose for purchasing IoT components.
- Developed backend services using Node.js, Express.js, and MongoDB with REST APIs.

**Smart Smoke Detection and Alert System (SIM800L)**

*IoT Embedded Project*

**2025**

*India*

- Designed a smoke and gas detection system using NodeMCU, MQ-2 sensor, and SIM800L GSM module.
- Implemented SMS alerts, call, buzzer, LED indicators, and LCD-based status display.

**Smart Inventory Management System**

*IoT & Computer Vision Project*

**2025**

*India*

- Developed an inventory monitoring system using camera-based product detection and OCR.
- Enabled real-time inventory updates with backend database synchronization.

**Mini CNC Portrait Drawing Machine**

*Embedded Systems Project*

**2025**

*India*

- Built a CNC plotter using Arduino Nano and stepper motors for image-based drawing.

## Certifications

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<b>Cloud Computing</b> <i>IBM</i>	<b>Jun. 2025</b> <i>Online</i>
<b>Introduction to Containers, Kubernetes, and OpenShift</b> <i>IBM</i>	<b>Jun. 2025</b> <i>Online</i>
<b>Prompt Engineering</b> <i>IBM</i>	<b>Jun. 2025</b> <i>Online</i>
<b>Android Development</b> <i>Internshala</i>	<b>Jul. 2024</b> <i>Online</i>
<b>Android Development</b> <i>Solitaire Infosys</i>	<b>Nov. 2021</b> <i>India</i>

## Leadership & Positions of Responsibility

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<b>President – Boys Hostel</b> <i>Government Polytechnic Sundernagar</i>	<b>2021 – 2022</b> <i>Himachal Pradesh, India</i>
<ul style="list-style-type: none"><li>– Led hostel administration and coordinated between students and faculty.</li><li>– Handled discipline, facilities, and student welfare activities.</li></ul>	

## Extracurricular Activities

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<b>Participant – Virtual Labs Interaction Program</b> <i>Indian Institute of Technology (IIT) Delhi</i>	<b>2024</b> <i>India</i>
<ul style="list-style-type: none"><li>– Gained exposure to simulation-based and remote laboratory platforms.</li></ul>	