

Ujjwal Keshri

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SUMMARY

Aspiring Electrical Engineer with hands-on experience in embedded system prototyping and automated control systems. Skilled in programming microcontrollers using C/C++ and implementing IoT protocols for real-time sensor data acquisition. Driven to develop efficient and reliable engineering solutions, with a strong interest in applying technical knowledge to complex real-world problems.

WORK EXPERIENCE

Industrial Trainee

June 2024 - July 2024

Indian Oil Corporation Limited — SERPL, Bhubaneswar Pump Station (Jatni)

- Assisted in the maintenance and troubleshooting of electrical systems and equipment at the SERPL, Bhubaneswar Pump Station.
- Gained practical experience with the operation and control of automated pumping systems within the pipelines division.

PROJECTS

Automated Solar Tracking System

[Link to Project](#)

- Designed a dual-axis solar tracker on an Arduino platform, using a quadrant of four LDRs to act as the primary positioning sensor.
- Programmed the microcontroller to read analog voltage levels from each LDR, calculate horizontal and vertical error signals, and ignore minor fluctuations within a TOLERANCE dead-zone to prevent motor oscillation.
- Implemented a closed-loop control system that drives two servo motors via PWM signals, stepping their position to nullify the error and actively track the light source, while simultaneously streaming all sensor and position data as JSON packets over Serial.

IoT Weather Monitoring Station

[Link to Project](#)

- Engineered an IoT weather station using an ESP32 microcontroller, interfacing it with a BME280 sensor via the I2C serial protocol (SDA/SCL) to read temperature, humidity, and pressure data.
- Programmed the ESP32 firmware to use WiFiManager for on-device configuration, enabling it to connect to WiFi and publish sensor readings as JSON payloads to a remote MQTT broker.
- Implemented a dual-data pathway for visualization: a Python backend subscribes to the MQTT stream to log data in SQLite and broadcast via WebSockets, while a JavaScript dashboard can also connect directly to the ESP32's serial port using the Web Serial API.

EDUCATION

2023 - present	BTech-Electrical Engineering at Odisha University Of Technology and Research, Bhubaneshwar	(CGPA: 8.53/10)
2022	Class 12th CBSE	(88.60%)
2021	Class 10th CBSE	(89.80%)

SKILLS

Technical Skills

Programming Languages	C/C++, Python, JavaScript [React.js], HTML/CSS
Design & Simulation	Altium Designer, MATLAB & Simulink
Hardware & Embedded	Arduino, ESP32, STM32, AVR, PCB Design
Data & Dev Tools	SQLite, JSON, Git, ChatGPT, Gemini, Claude

Soft Skills

Problem-Solving, Analytical Thinking, Detail-Oriented, Self-Motivated