



Air Quality Monitoring System using IoT

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The background of the slide is a dark blue field filled with a complex, glowing network of white lines and nodes. The nodes are represented by small, semi-transparent blue spheres of varying sizes, some of which are more prominent than others. The lines connecting them form a dense, web-like structure that fills the entire frame, creating a sense of interconnectedness and digital complexity.

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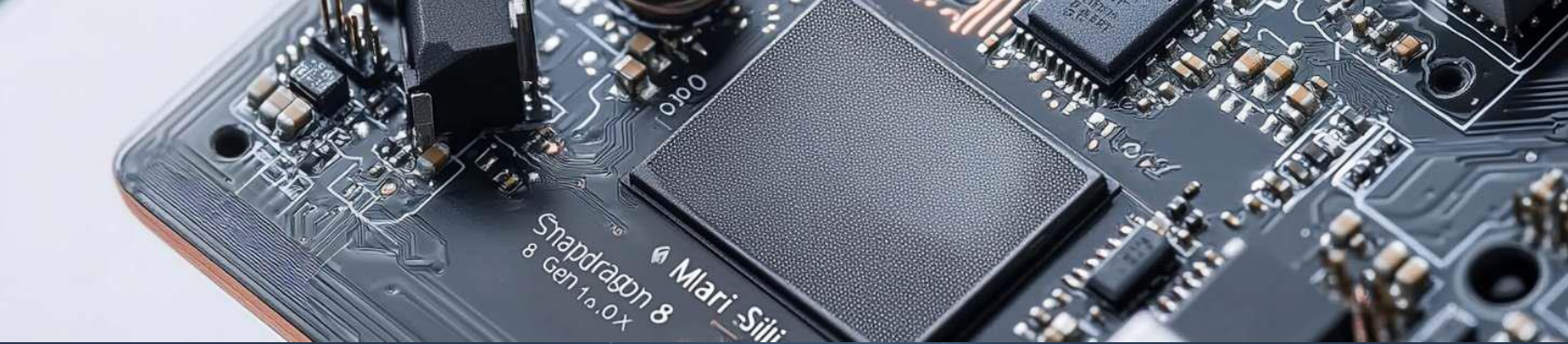
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Abstract

Real-time Monitoring: Continuously tracks air quality using sensors like MQ135 and DHT11, connected to ESP8266/ESP32.

Data Visualization: Displays AQI levels, pollutant trends, and alerts users when pollution exceeds safe limits.

User-Friendly Insights: Suggests safe times for outdoor activities and raises awareness about environmental health.

Introduction



Content should be technical, clear, and tailored for an academic project.



Highlight how the system collects and transmits environmental data and its importance in real-time air quality monitoring.

Objective

To develop an efficient air quality monitoring system using IoT.



To provide real-time data on air quality.

To create awareness regarding air pollution.

Literature Survey



Review existing literature on air quality monitoring systems.



Analyze various methodologies and technologies used in current systems.



Identify gaps in the existing systems and propose enhancements.

Existing System

Describe the limitations of current air quality monitoring systems.

1

2

Highlight the lack of real-time monitoring in traditional setups.

3

Discuss the challenges faced in data collection and transmission.



Proposed System

1

Introduce the proposed air quality monitoring system design.

2

Detail the integration of the ESP8266 Wi-Fi module, DHT11, and MQ135 sensors.

3

Explain how the system improves data accessibility and response time.

ESP8266 Wi-Fi Module

- 1 Description of the ESP8266 features and functionalities.
- 2 Discuss its role in data transmission.





DHTII Temperature and Humidity Sensor

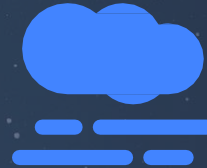
Explain the working principle of the DHTII sensor.

Importance of temperature and humidity data in air quality assessment.

MQ135 Air Quality Sensor



Overview of MQ135 sensor capabilities.



Importance of detecting various gases to measure air quality.

Future Enhancements

Suggest improvements for system efficiency and accuracy.

1

2

Discuss potential for integration with mobile applications.

3

Propose a more extensive network of monitoring stations for broader data collection.

References

ESP8266 Documentation – Espressif Systems

DHT11 Sensor Datasheet – Adafruit

MQ135 Gas Sensor – Components101

Arduino Project Hub – <https://create.arduino.cc/projecthub>

