Air Quality Index Predictor

About the project

Air pollution is one of the most critical environmental issues impacting human health and ecosystems globally. To monitor and manage air quality, governments use the Air Quality Index (AQI) — a standardized value that indicates how polluted the air currently is or how polluted it is forecast to become.

This project focuses on building a Machine Learning-based model to predict AQI values using historical air quality data obtained from Continuous Ambient Air Quality Monitoring Stations (CAAQMS) in Kerala, India.

The data includes pollutant concentrations such as:

- PM2.5, PM10
- CO, NO, NO_2, NOx, SO_2, NH_3, Ozone (O_3)

Using regression algorithms like Random Forest, we aim to estimate AQI based on these pollutant levels and help visualize trends for better environmental management and public awareness.

Enter Pollutant Concentrations:

Carbon Monoxide (CO)

| 0.00 | − | + |

Ozone (O$_3$)

| 0.00 | − | + |

Nitric Oxide (NO)

| 0.00 | − | + |

Nitrogen Dioxide (NO$_2$)

| 0.00 | − | + |

Nitrogen Oxides (NOx)

| 0.00 | − | + |

Ammonia (NH$_3$)

| 0.00 | − | + |

Sulphur Dioxide (SO$_2$)

| 0.00 | − | + |

Particulate Matter ≤ 2.5 μm (PM2.5)

| 0.00 | − | + |

Particulate Matter ≤ 10 µm (PM10)

0.00   −   +

Predict

AQI Classification Scale

🧠 Built with Machine Learning 🌍 For cleaner air in Kerala!