Research Paper presentation

Machine Learning and Artificial Intelligence Techniques in Restraining Air Pollution in India

CONTENT

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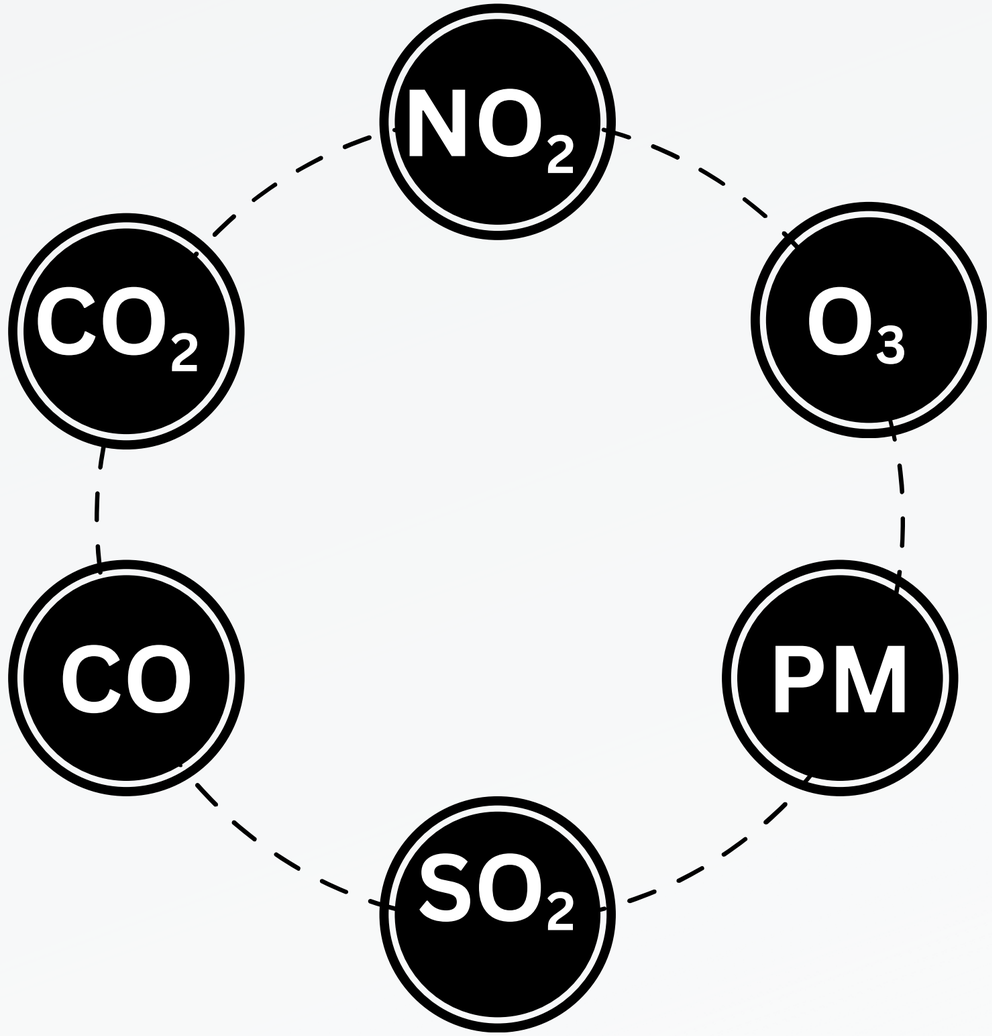
INTRODUCTION

Machine learning techniques have revolutionized the field of gas detection, offering new and powerful methods for analyzing and interpreting data from various gas monitoring systems.

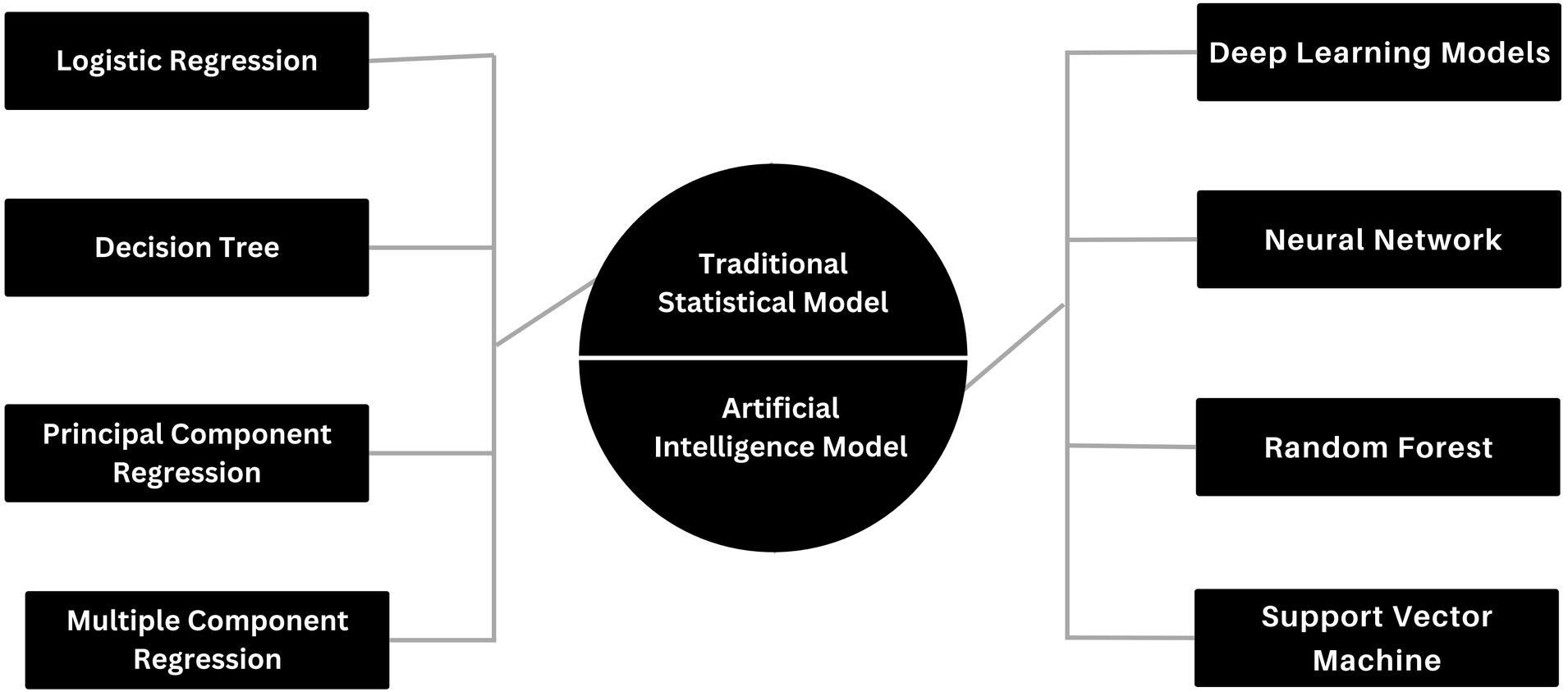
By leveraging these techniques, we can develop highly accurate and efficient models for detecting and preventing the presence of poisonous gases in the air.

VARIOUS GASES CAUSE OF POLLUTION

The main air pollutants including NO2, SO2, CO2, CO, O3, and particulate matter (PM), all of which adversely affect the ecosystem and individuals.



TECHNOLOGY USED



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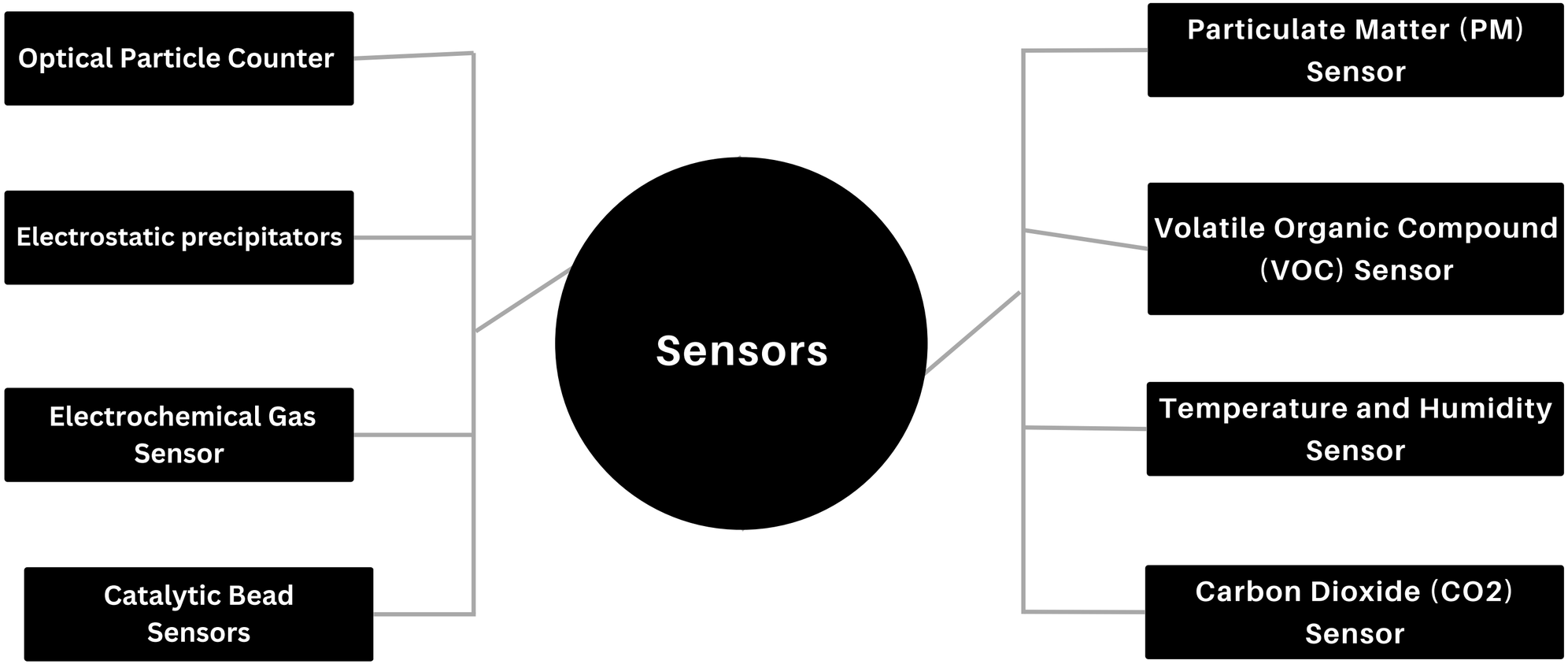
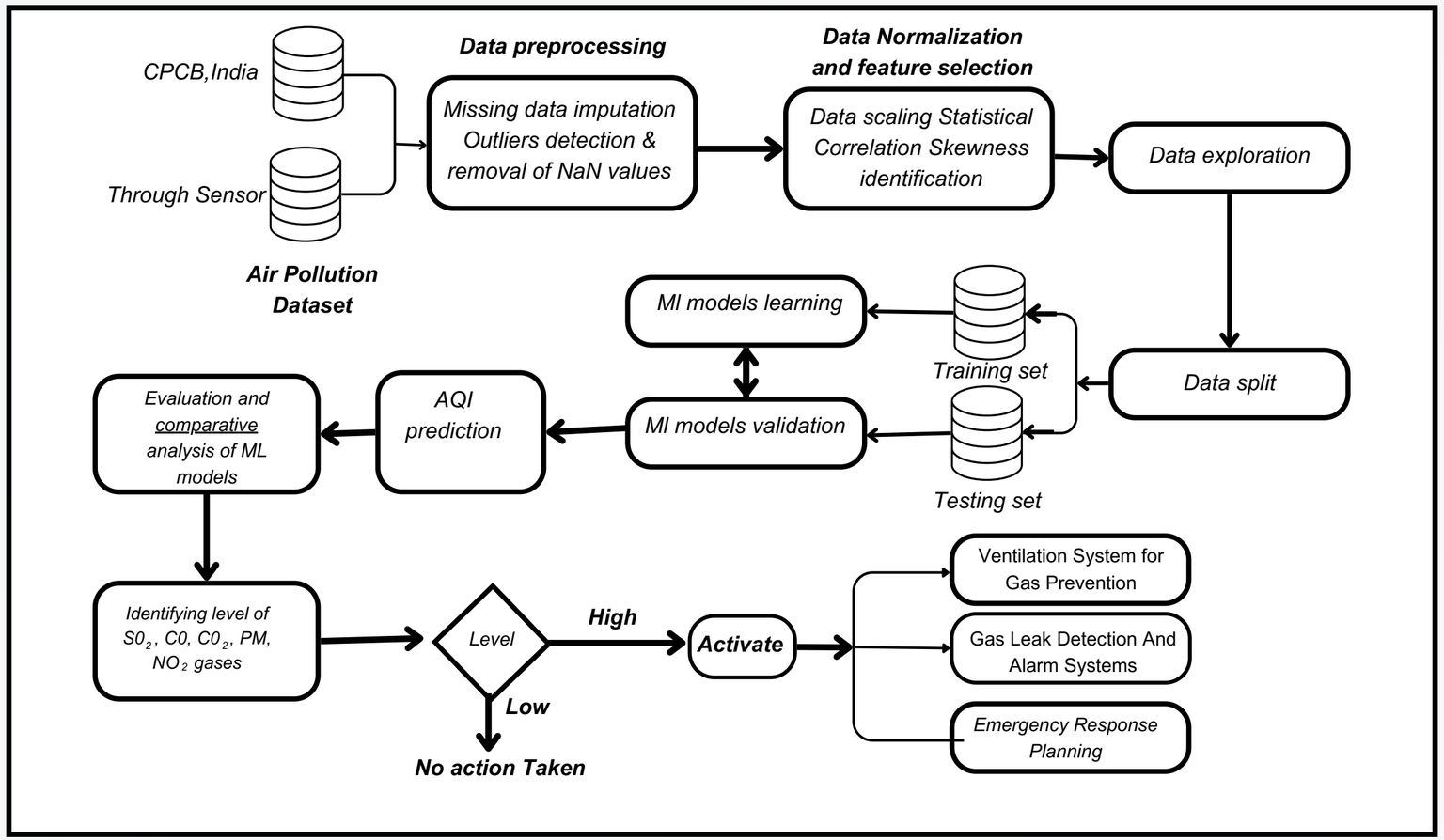


FLOW CHART


CPCB,India
Through Sensor
Air Pollution Dataset
Data preprocessing
Missing data imputation
Outliers detection &
removal of NaN values
Data Normalization
and feature selection
Data scaling Statistical
Correlation Skewness
identification
Data exploration
Data split
Training set
Testing set
Ml models learning
Ml models validation
AQI
prediction
Evaluation and
comparative
analysis of ML
models
Identifying level of
SO_2, C0, CO_2, PM,
NO_2 gases
Level
High
Low
No action Taken
Activate
Ventilation System for
Gas Prevention
Gas Leak Detection And
Alarm Systems
Emergency Response
Planning

CHALLENGES AND NEED

1. Lack of enabling data ecosystems
2. Inadequate availability of Artificial Intelligence expertise, manpower, and skilling opportunities
3. The low intensity of Artificial Intelligence Research
4. High resource cost and low awareness for adopting Artificial Intelligence in business processes
5. Data quality and validation issue
6. Need Research demand in big data quality assurance

RESULT

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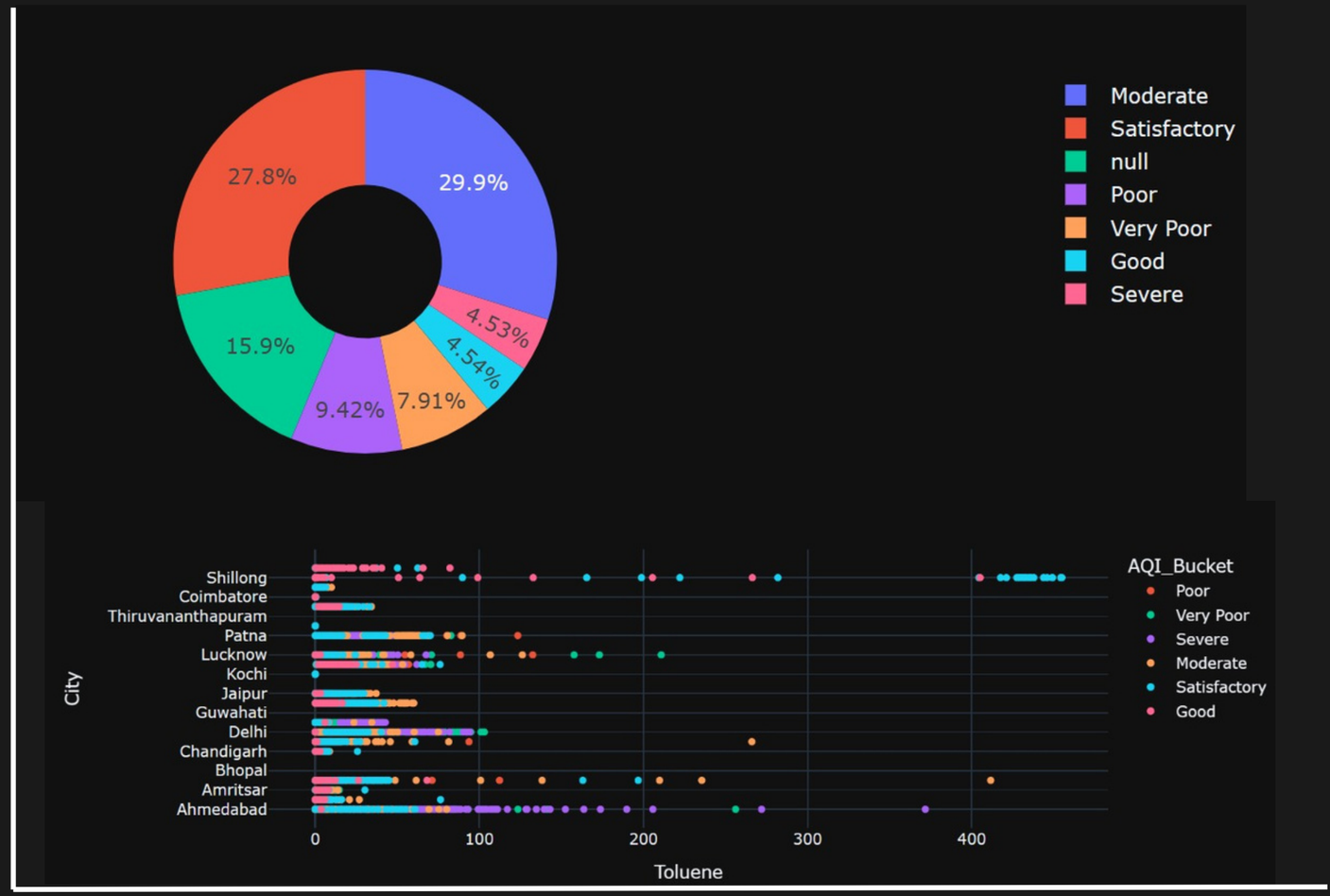
This section deals with the experimental design and empirical analysis for predicting AQI values through the pollutants present in the air. The air pollution dataset is split into training (75%) and testing (25%) subsets before evaluating ML models. The Python libraries like Scikitlearn, NumPy, Pandas, Seaborn, etc.



Thank You

Our Esteemed Jury Members and Every AI Advocate for Pioneering Change in Our World

Gerente General