PREDICTION OF AIR POLLUTION BY USING MACHINE LEARNING ALGORITHM

Siddireddy Sai Lakshmi Annapurna (MCA Scholar), B V Raju College, Vishnupur, Bhimavaram, West Godavari District, Andhra Pradesh, India, 534202.

Dr. I. R. Krishnam Raju, B V Raju College, Vishnupur, Bhimavaram, West Godavari District, Andhra Pradesh, India, 534202.

ABSTRACT

controlling and defensive the higher air greatness has gotten one in everything about first imperative occasions in different creating and metropolitan districts at the present. The greatness of air is adversely contacting collectible to the different styles of tainting influenced through the transportation, power, powers consumptions, and so forth. In our country population is a big problem as day by day population is increasing, so the rapid increasing in population and economic upswing is leading environment problems in city like air pollution, water pollution etc. In some of air pollution and air pollution is direct impact on human body. As we know that major pollutants are arising from Nitrogen Oxide, Carbon Monoxide & Particulate matter (PM), SO2 etc. Carbon Monoxide is arising due to the deficient Oxidization of propellant like as petroleum, gas, etc. nitrogen oxide (NO) is arising due to the ignition of thermal fuel; Sulphur Dioxide(So2) is major spread in air, So2 is a gas which is present more pollutants in air, it's affect more in human body. the predominance of air is overstated by multidimensional impacts containing spot, time and vague boundaries. The goal of this improvement is to take a gander at the AI basically based ways for air quality expectation. In this paper we will predict of air pollution by using machine learning algorithm.

1. INTRODUCTION

The Environment describe about the thing which is everything happening in encircles the Environment is polluted by human daily activities which include like air pollution, noise pollution. If humidity is increasing more than automatically environment is going more hotter. Major cause of increasing pollution is increasing day by day transport and industries there are 75 % NO or other gas like CO, SO2 and other particle is exist in environment.. The expanding scene, vehicles and creations square measure harming all the air at a feared rate.

Therefore, we have taken some attributes data like vehicles no., Pollutants attributes for prediction of pollution in specific zone of Delhi

2. EXISTING SYSTEM

The Air Pollution Forecasting System: Air Quality Index (AQI) is a record that gives the public the degree of contamination related with its wellbeing impacts. The AQI centers around the different wellbeing impacts that individuals may encounter dependent fair and square and long stretches of introduction to the poison concentration. The AQI values are not quite the same as nation to nation dependent on the air quality norm of the country.

The higher the AQI level more noteworthy is the danger of wellbeing related problems. The by and large point of this venture is to make a student calculation that will have the option to foresee the hourly contamination focus. Additionally, an Android application will be built up that will provide the clients about the constant contamination convergence of PM2.5 alongside the hourly forecasted value of the toxin fixation from the student calculation. The Android application will also recommend data of the less dirtied[1].

3. PROPOSED SYSTEM

1) Data assortment: There is a different method from which we collected data from various dependable sources like Delhi Gov. site.

2) Exploratory examination: We research and explore examination with various parameter like ID of outliners, consistency check, missing qualities, and so on, it's totally occurred in this period of the venture.

3) Data Manipulation control: In period of data control stage the required missing data need to insert in utilizing the mean estimations of that characteristic of information. [2]

4) Prediction of boundaries utilizing by gauge model: For appropriate data indirect relapse we have to keep future qualities for different boundaries just

5) Implementation of straight relapse: Whenever all the boundaries become in active mode or they are accessible mode, the direct relapse calculation would be used in anticipate the air quality index (AQI).

6) Data accuracy investigation: We have to analyze that used model is being fit for overall data or not so we have to cross check root mean error, absolute percentage error then after we have to assume this factor is good for accuracy or not.

Architecture Diagram
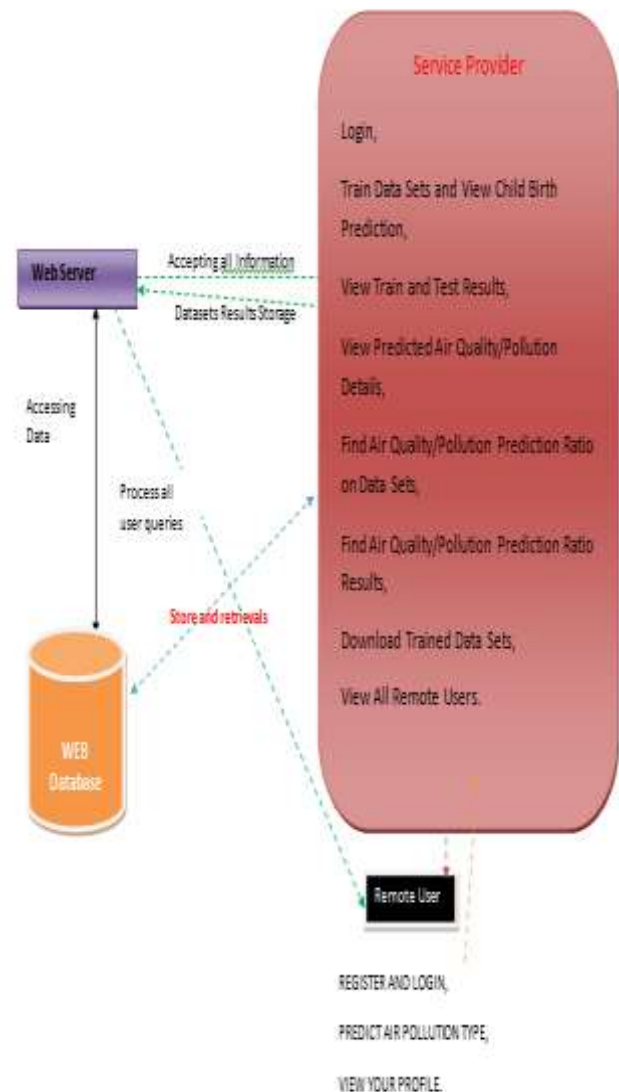
> Class Diagram :
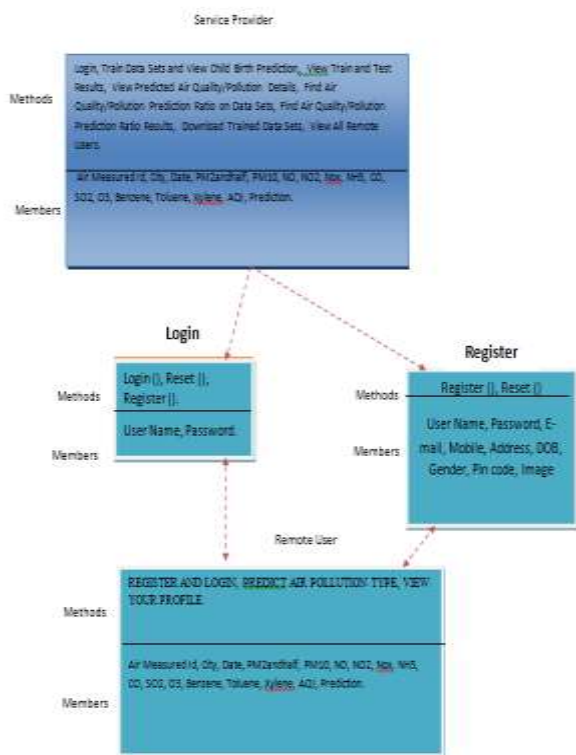
CONCLUSION

Precision of our model is very acceptable. The anticipated AQI has a precision of 96%. Future upgrades incorporate expanding the extent of district and to incorporate whatever number locales as could be allowed as of now this venture targets foreseeing the AQI estimations of various areas of close by New Delhi. Further, by utilizing information of various urban areas the extent of this venture can be exhausted to anticipate AQI for different urban communities also.

REFERENCES

[1] Ni, X.Y.; Huang, H.; Du, W.P. "Relevance analysis and short-term prediction of PM 2.5 concentrations in Beijing based on multi-source data." Atmos. Environ. 2017, 150, 146-161.

[2] G. Corani and M. Scanagatta, "Air pollution prediction via multi-label classification," Environ. Model. Softw., vol. 80, pp. 259-264,2016.

[3] Mrs. A. GnanaSoundariMtech, (Phd) ,Mrs. J. GnanaJeslin M.E, (Phd), Akshaya A.C. "Indian Air Quality Prediction And Analysis Using Machine Learning". International Journal of Applied Engineering Research ISSN 0973-4562 Volume 14, Number 11, 2019 (Special Issue).

[4] Suhasini V. Kottur , Dr. S. S. Mantha. "An Integrated Model Using Artificial Neural Network

[5] RuchiRaturi, Dr. J.R. Prasad ."Recognition Of Future Air Quality Index Using Artificial Neural Network".International Research Journal ofEngineering and Technology (IRJET) .e-ISSN: 2395-0056 p-ISSN: 2395-0072 Volume: 05 Issue: 03 Mar-2018

[6] Aditya C R, Chandana R Deshmukh, Nayana D K, Praveen Gandhi Vidyavastu ." Detection and Prediction of Air Pollution using Machine Learning Models". International Journal o f Engineering Trends and Technology (IJETT) - volume 59 Issue 4 - May 2018

[7] Gaganjot Kaur Kang, Jerry ZeyuGao, Sen Chiao, Shengqiang Lu, and Gang Xie." Air Quality Prediction: Big Data and Machine Learning Approaches". International Journal o f Environmental Science and Development, Vol. 9, No. 1, January 2018

[8] PING-WEI SOH, JIA-WEI CHANG, AND JEN-WEI HUANG," Adaptive Deep Learning-Based Air Quality Prediction

Model Using the Most Relevant Spatial-Temporal Relations," IEEE ACCESS July 30, 2018.Digital Object Identifier10.1109/ACCESS.2018.2849820.

[9] Gaganjot Kaur Kang, Jerry Zeyu Gao, Sen Chiao, Shengqiang Lu, and Gang Xie,"Air Quality Prediction: Big Data and Machine Learning Approaches," International Journal of Environmental Science and Development, Vol. 9, No. 1, January2018.

[10] Haripriya Ayyala somayajula, Edgar Gabriel, Peggy Lindner and Daniel Price, "Air Quality Simulations using Big Data Programming Models," IEEE Second International Conference on Big Data Computing Service and Applications,2016.