

Air Quality Detector and Analysis System

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Abstract: *This paper proposes an air quality detector and analysis system with a web application. The massive development of the Industrial factories in urban and peri-urban areas is creating much chaos; such as urbanization, deforestation and mostly continuous greenhouse gas emission. Such development has much impact on Air quality, the Air quality monitoring, detection and analysis system can be one of the initial solutions that should be developed to help the stakeholders and decision makers such as National Environmental Affairs Department, Ministry of Health, National Planning Commissions or other environmental researchers and laboratories, both public and private institutions to monitor and measure the surrounding air quality and come up with the better solutions and planning. The data collected by device or system will help in research, decision and policy making in finding the best solutions to avoid health risks for citizens, industrial workers and other surrounding living species. To develop an effective solution, there is need to embed the system with Machine learning and AI Algorithm that will be able to detect the presence and identify the number of various gases, help in decision making and calculations by using just few numbers of sensors. The system will use Neural network model (Self organizing feature maps) algorithm. This algorithm can work with both low number of data sets and high hence it is robust enough to handle data with noise and errors. Developed models are applied to simulate and forecast based on the annual and daily data. In general, the models could predict air quality patterns with modest accuracy. The device will be used to alert the users on the presence of flammable gases as well in real-time*

Keywords: Air Quality Detector

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