ABSTRACT

The air quality in Indonesia is getting worse every day with the current situation. In today's increasingly modern era, with increasingly advanced industry and increasingly advanced transportation, this has an inverse effect on air quality. Like pollutants, the concentration of patriculates, carbon monoxide, ozone, sulfur dioxide and nitrogen dioxide will be monitored by the author in the hope of being able to classify the air pollution that will exist in big cities, just like in weather forecasts.

By using Multipoint Sensors as the hardware as well as machine learning models and Antares IoT as the software which will be able to monitor air pollution at any time. Before the data enters the machine learning model, the data is first trained using ISPU (Air Pollution Standard Index). From there we can create Training dataset data which will later become clean data for Missing values and Imbalance Datasets. With sample data from ISPU, namely concentration of patriculates (PM10), carbon monoxide (CO), ozone (O3), sulfur dioxide (SO2) and nitrogen dioxide (NO2).

From here the author uses several methods to classify the dataset which will later be input into a machine learning model. By carrying out several tests on the training dataset, then after that, look for the fill missing values using MICE, and after that the imbalance data will appear which will then be trained using Random oversampling. For the classification itself, the author uses Adaboost as the method used with an accuracy of around 90% according to the program that has been run in the machine learning model.

Keywords: *Machine Learning, Adaboost, Random Oversampling*