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Forecasting Air Pollution Levels Using Support Vector Regression and K-Nearest Neighbor Algorithm

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Abstract: Air pollution is one of the problems faced by big cities, including Surabaya. One of the factors that drives air pollution in big cities is high population mobility. As known, air is composed of oxygen (O2), carbon dioxide (CO2), tropospheric ozone (O3), nitrogen (N2), and particles (PM10 and PM 2.5). High concentration levels of O3 pollutants in an urban area can endanger human health and ecosystems. To monitor air quality in Surabaya city, the city government uses monitoring equipment and air control station facilities. The data obtained becomes a reference for predicting air conditions at that time and forecasting future conditions using certain methods. In this research, the methods used for forecasting are Support Vector Regression (SVR) and K-Nearest Neighbor (K-NN). The Support Vector Regression (SVR) method showed the best error value of 0.0583 and the K-Nearest Neighbor (K-NN) method had the best error value of 0.0486.

Keywords: *pollution; forecasting; Support Vector Regression; K-Nearest Neighbor.*

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