ABSTRACT

Traffic congestion is a problem that frequently arises. Congestion causes unpredictable travel times, the economy will be delayed, and people become stressed. Managing traffic is one strategy for reducing congestion. Congestion must be identified in order to make the traffic management process simpler. In this project, classification is carried out based on audio data and create an application to identify congestion. To perform the classification, Support Vector Machine (SVM) and Naïve Bayes algorithm is used and compare the performance on both algorithms. AI-SKEMA (*Aplikasi Identifikasi Suara Kemacetan*) is a web-based application to identify a congestion. The application uses Streamlit framework to create its website. This application functions as an identifier to determine the probability of inputted sample whether is it congested or not congested road based on a model that is trained. In the process of developing this application, research is conducted to collect data at two red light intersections that were crowded and not crowded by recording the road sounds. Audio Data is labeled as CONGESTED and NOT CONGESTED. A model consists of audio data is trained to get the identification results and its implemented on the web application. Based on performance evaluation that has been carried out, Support Vector Machine has the best performance compared to Naïve Bayes, which has Accuracy, Precision, Recall, and F-Measure are 0.95, 0.91, 1.00, 0.89 respectively. The classifier system in the application precisely identifies the input sample and displays the probability of inputted sample based on the trained model.

Keywords: Classification, Traffic Sound Identification, Support Vector Machine, Naïve Bayes, Streamlit