

Abstract

Dengue Hemorrhagic Fever (DHF) is an infectious disease that has a high mortality rate. DHF has been categorized as a deadly disease since 2013. Even in West Java Province, the incidence rate (IR) has increased. The increase occurred in 2018 around 24.75% and in 2019 it became 51.48%. One of the efforts to reduce the incidence of DHF is to predict its spread, so that preventive measures can be taken. One approach to predict the spread of dengue disease is to use the Machine Learning method. In this study, the Extreme Gradient Boosting (XGBoost) algorithm was used to predict the spread of DHF in Bandung Regency. The data used are data on the number of dengue cases and weather data from 2011-2021. This study uses the XGBoost algorithm to obtain the best prediction model in predicting the IR of the next month. From the experimental results, the best average performance was obtained by performing hyperparameter tuning is RMSE of 1.039 and Correlation Coefficient (CC) of 0.911 with a training data length of 5 years and the most influential weather parameter is temperature.

Keywords: XGBoost, DBD, prediction, weather, incidence rate