

Abstract

Dengue Hemorrhagic Fever (DHF) is a disease that occurs every year. Bandung City is one of the regions in Indonesia with a high incidence rate of dengue fever cases which continues to increase from 2017 to 2021 at 49.66%. Therefore, this study aims to combine the *machine learning* algorithms, such as *Naive Bayes*, *Support Vector Machine*, *Decision Tree*, and *Random Forest* with the Hybrid *Stacking* and *Bagging* method to improve accuracy in the number of DHF cases dataset from the 2017 to 2021 in Bandung City. The results show that the accuracy using *Support Vector Machine*, *Naive Bayes*, *Decision Tree*, and *Random Forest* algorithms are 85.50%, 61.30%, 77.40%, and 80.60%, respectively. The accuracy increases after applying hybrid approach. The *bagging* method gets 88.70% accuracy, by using *stacking* method, the accuracy increased to 90.30%. The *stacking* method gets precision, recall, and f1-score of 90.62%, 90.94%, and 90.65%, respectively. From the results obtained it is evident that the hybrid approach by combining *machine learning* algorithms can improve classification accuracy results. The contribution of this research is to help the government in predicting and classifying the incidence rate of dengue fever to reduce the rate of cases in each region.

Keywords: Classification, Hybrid, *Stacking*, *Bagging*, *Machine learning*, *Support Vector Machine*
