

ABSTRACT

Flood is natural disaster that often occur in the City or Regency of Bandung, especially areas located on the banks of rivers such as Dayeuhkolot Village, Bandung Regency. This disaster is generally caused by rising river water levels and high rainfall intensity. At Dayeuhkolot Village, the flood is quite difficult to prevent due to inaccuracies data provided by the local government to local community. With the result that the local community have no time to save their valuable things.

So that this final project, the author makes a machine learning algorithm with 3 different methods, namely decision tree, random forest, and naïve bayes using two features that generally cause flooding, there are river water levels and rainfall intensity. Two data are used because those data are dominant for the potential for flooding in Dayeuhkolot. The dataset obtained from Balai Besar Wilayah Sungai (BBWS) Citarum for Dayeuhkolot areas with total data 1460 for each feature. The accuracy of the 3 methods used will be compared with the ratio of the distribution of different *training* and *testing* data including 8:2, 7:3, and 6:4. The hope is this research could help the residents of Dayeuhkolot Village in anticipating the occurrence of flood.

The *test* result with the several *test* scenarios is to gain the parameter values of accuracy, precision, recall, and f1-score. From the results obtained that the machine learning model with the great performance was achieved by random forest method with the accuracy points are 99.31%, 98.87%, and 98.97%. Then the average value is 99.05%, followed by the average precision value 97.91%, 99.18% recall, and 98% for f1-score. For the results of *testing* 3 *test* ratio scenarios with an average of computing time is 0.25616072 seconds.

Kata Kunci: *Decision Tree, Flood, Machine Learning, Naïve Bayes, Random Forest.*