ABSTRACT

Stroke, also known as a cerebrovascular accident (CVA), is a condition in which there is a sudden disruption in brain function due to circulatory problems, which can result in paralysis or even death of brain cells. Stroke consists of two types: ischemic, caused by blood vessel blockage, and hemorrhagic, caused by bleeding into the brain. In Indonesia, stroke is a leading cause of death with incidence rates continuing to rise. Therefore, prevention efforts and early treatment are crucial in managing this condition. Data mining and machine learning have become important tools in predicting stroke risk. In this study, ensemble techniques, particularly bagging and Adaboost, were applied to decision tree and naive Bayes algorithms to improve accuracy in predicting stroke. The research results indicate that the use of ensemble techniques, especially Adaboost, significantly enhances the performance of the naive Bayes algorithm, with accuracy increasing by 7.42%. The combination of decision tree algorithm with bagging provides the highest accuracy in predicting stroke, reaching 96.91%, followed by the combination of decision tree with Adaboost and naive Bayes with Adaboost. These findings demonstrate that the use of ensemble techniques can significantly improve the performance of algorithms in predicting stroke, with a focus on utilizing Adaboost for the naive Bayes algorithm and bagging method for decision trees.

Keywords: stroke, decision tree, naïve bayes, adaboost, bagging