Abstract

Autistic Spectrum Disorder, or abbreviated as ASD, is an imperfect neurological development condition in which sufferers need substantial health care costs. Early diagnosis is one way to reduce the condition of the sufferers. However, a high cost is needed to diagnose ASD. So that a classification method is needed to make these costs more effectively.

One classification method in the science of machine learning is random forest. But in its application, this method usually produces a small value of accuracy and F1 score. To overcome this, the writer tries to combine random forest method with firefly algorithm. The Firefly Algorithm used in this case is a representation of 1 firefly as 1 decision tree. In this research, the dataset which is used is ASD dataset which contains attributes and class the respondent. The firefly algorithm application in ASD cases that the writer made as a research topic turned out to produce the value of accuracy which is not much different from not using firelfy algorithm. For a decision tree of 10 in the ASD dataset, the accuracy generated by random forest and random forest with firefly algorithm has a value of 89.36% and 90.78%. For F1-scores in random forest and random forest with firefly algorithm of 27.15% and 35.67% For decision trees of 30, accuracy generated by random forest and random forest with firefly algorithm has a value of 90.78% and 94.32%. For F1-scores in random forest and random forest with firefly algorithm it was 34.09% and 5.1%.

Keywords : Random Forest, Firefly, Accuraccy, F1-Score