Performance Analysis of Different Multi-Class Classification Algorithms Using Hyperparameter Tuning Techniques

Johnsymol Joy

Sathyabama Institute of Science and Technology

Abstract

Multiclass classification is a classification problem with more than two classes. Multiclass classification makes the assumption that each sample is assigned to one and only one class. It is an important concepts in machine learning. Multiclass classification algorithms currently used in wide varieties of applications. In machine learning we can find different types of multiclass algorithms like SVM, Decision tree and Random Forest. This paper will discuss working, advantages and disadvantages of these algorithms and also focus on performance analysis these algorithms. For performance analysis, this paper takes a simple UCI multi class glass dataset that Classify glass in to seven types. Here we perform hyperparameter tuning techniques like random search or grid search on this dataset and analyses performance of these three algorithms.