

A Direct Ensemble Classifier for Imbalanced Multiclass Learning

Abstrak

Researchers have shown that although traditional direct classifier algorithm can be easily applied to multiclass classification, the performance of a single classifier is decreased with the existence of imbalance data in multiclass classification tasks. Thus, ensemble of classifiers has emerged as one of the hot topics in multiclass classification tasks for imbalance problem for data mining and machine learning domain. Ensemble learning is an effective technique that has increasingly been adopted to combine multiple learning algorithms to improve overall prediction accuracies and may outperform any single sophisticated classifiers. In this paper, an ensemble learner called a Direct Ensemble Classifier for Imbalanced Multiclass Learning (DECIML) that combines simple nearest neighbour and Naive Bayes algorithms is proposed. A combiner method called OR-tree is used to combine the decisions obtained from the ensemble classifiers. The DECIML framework has been tested with several benchmark dataset and shows promising results.