Abstract

In this paper, we introduce a new approach to the classification of streaming data based on bootstrap aggregation (bagging). The proposed approach creates an ensemble model by using ID3 classifier, naïve Bayesian classifier, and k-Nearest-Neighbor classifier for a learning scheme where each classifier gives the weighted prediction. ID3, naïve Bayesian, and
k-Nearest-Neighbor classifiers are very well known data mining methods, which have been already used in many real life classification problems. The proposed approach addresses the practical problems of the classification of streaming data and successfully tested on a number of benchmark problems including large intrusion detection dataset from the UCI machine learning repository to produce a comparison with the established approaches. The experimental results demonstrate that the proposed ensemble classifier achieved high classification rates and generated very low misclassification error.

Reference

An Ensemble Approach to Classifier Construction based on Bootstrap Aggregation

Index Terms
- Computer Science
- Data Mining

Key words
- Bagging
- ID3 Classifier
- Naïve Bayesian
- k-Nearest-Neighbor Classifier
- Classification Rate