Survey of Ensemble Classifiers

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An interesting class of algorithms in the Machine Learning domain are the ensemble classification algorithms that try to improve the predictive power of weak classifiers through averaging or aggregation. The goal of this survey is to evaluate the building blocks of a typical ensemble classifier. An ensemble classifier, in most cases, performs far superior than its underlying individual base classifier. The survey begins by exploring some of the typical base classifiers that are used in an ensemble. Through the evaluation of ensemble techniques such as Bagging, Boosting and Bayes Optimal Classifier, the intuition and rationale of why an ensemble classifier outperforms a weak individual classifier is presented. An analysis of Adaboost learning classifier is also presented to review the mechanics of how an ensemble classification scheme achieves the boosted predictive power.

Additional Key Words and Phrases: Classifier, ensemble, bagging, boosting, bayes optimal classifier, adaboost

1. INTRODUCTION

This report is the abstract to a full masters study report in the making required as part of the Masters in Computer Science program at UNC Charlotte.

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