

# Abstract

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*An ensemble is a classifier created by combining the predictions of multiple component classifiers. It is well-known that ensemble methods can be used for improving prediction performance. In this project we study about the ensemble of classifiers and the various methodologies for the creation of ensembles. We then make an evaluation of existing ensemble methods like Bagging, Boosting and Stack generalization and learn that they perform better than selecting the best classifier from the ensemble. We then present a new method for combining classifiers from different classification families into an ensemble based on a simple estimation of each classifier's class performance. The combining technique is simple, which can use any 'n' stronger learners as a base classifier to build a strong ensemble. To achieve diversity we use decision trees, k-nearest neighbour and Naïve Bayes classifiers.*

*Through the experimental results in our project we show that the proposed model improves classification accuracy than selecting the best classifier in the combination while in most of the cases boosting outperforms it. So in the second stage of the project we combine the results of our proposed method with the results of boosting, bagging and stacking to obtain results which are significantly better than using Boosting, Bagging or Stacking alone.*

**Keywords:** Classifier, Ensemble, Bagging, Boosting, Stacking, Meta-Ensemble