

## **A Comparative Assessment of Classification Methods**

Classification is widely applied in various industries, especially in the area of search engines. To focus on applications, the data set used is from a search engine query and five classifiers, namely Support Vector Machine, K-Nearest Neighbors, Random Forest, AdaBoost and Naïve Bayes, are studied. After comparing their misclassification rates on the data, SVM is found to have the best performance.

In the simulation chapter, two simulations are constructed for different purposes. The first simulation is conducted to confirm that Support Vector Machines perform better than other classifiers over this set of data. The second simulation is designed to show that no classification method is robust under all scenarios, and a combination of classifiers may have complementary benefits.