

## **Abstract**

In the last few years, dramatic increment in mobile phone users has been witnessed and SMS service has become the most effective way of communication as it is very cost effective. This advantage of SMS service has also attracted spammers, advertising agencies and some cruel mentality persons to send messages directly to the users as the response rate of SMS is very high as compared to the email due to which SMS spam is increasing day by day. SMS spams are not only annoying, but it can also be expensive in case of international roaming as people have to pay to receive messages. The major handicap in finding the most effective solution is the scarcity of public SMS spam datasets, which are solely needed for the validation and comparison of different classifiers. The content based filtering technique is the most common classifying technique used among different approaches taken to classify the messages. The content is very short and dynamic and it is very difficult to represent all the information in a mathematical classification model which may lead to decrease in performance of the classifier. In this report, we analyze to what extent the Naïve Bayes, K-nearest neighbour, C4.5, Support Vector Machine, Random Forest and the ensemble of aforementioned classifiers can be applied to the problem of detecting and stopping mobile spams. In particular, we applied feature extraction, data normalization, feature selection using different methods including fuzzy c-means on a dataset of messages publicly available on the UCI repository to create a final dataset of thirteen different features and then we tested all aforementioned classification algorithm on the final dataset prepared. Our results demonstrate that the ensemble of aforementioned classifiers can be effectively used to classify SMS spams as the accuracy of our classifier is found to be 97.56%.

## **Keywords**

Classification, Naïve Bayes, K-nearest neighbour, C4.5, Support Vector Machine, Random Forest, Ensemble, Feature Extraction, Normalization, Feature Selection