A Novel Method for Detecting Spam Email using KNN Classification with Spearman Correlation as Distance Measure

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Abstract

E-mail is the most prevalent method for correspondence because of its availability, quick message exchange and low sending cost. Spam mail appears as a serious issue influencing this application today’s internet. Spam may contain suspicious URL’s, or may ask for financial information as money exchange information or credit card details.

Here comes the scope of filtering spam from legitimate e-mails. Classification is a way to get rid of those spam messages. Various researches are proposed for spam filtering by classifying them into labels of spam and business messages.

Bayesian classification based spam filtering technique is a popular method. Also SVM based classifications are also used. K-nearest neighbour classification is simple, straightforward and easy to implement and has high F-measure compare to Bayesian and SVM classification. But accuracy of traditional KNN is lower than Bayesian classification.
In this work a detection of spam mail is proposed by using K-nearest neighbour classification method by combining Spearman's correlation coefficient as distance measure rather than traditional Euclidean distance. Experimental results present a significant improvement in accuracy with higher F-measure compare to traditional algorithms.

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Index Terms

Computer Science Software Engineering
Keywords

Bayesian classification, SVM Classification, spam, Email, KNN classification, Spearman correlation, Spam Filtering, Accuracy, F-measure.