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Ham or spam? A content based classification for Email filtering

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ABSTRACT

The popularity of Internet Services is increasing in the recent years, especially for accessing all the required information in our day-to-day lives. Web Browsers are used for this purpose. Users sometimes get some information which is not being intended to be shown to their particular age group. We propose to use an enhanced system for file accessing considering security, ease of access, performance and few other parameters. In this project, we use text mining technique to categorize the data according to age group and also user interest.Web content classification using machine learning techniques is therefore an emerging possibility to automatically maintain services for the web. The concept of Naïve Bayes classifier is then used on derived features and finally proposed algorithm has been implemented and tested.

Keywords: **Text mining, categorize data, Web content classification, Naïve Bayes classifier.**

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I. INTRODUCTION

Spam mails are largly known for unwanted and unsolicited emails sent with the purpose of financial gain i.e. fraud or simply causing harm i.e. harass or irritate users. They may be used to distribute fake announcements or viruses that cause responders an average loss of 29 USD per reply. It has been estimated that 1 out of 40,000 users reply to spam emails unknowing. Moreover, the fact that 48 billion of the 80 billion emails daily send are spam sothat both the importance and urgency of developing effective classification procedures for received emails. Filtering spam is one of the important applications of pattern recognition and data mining advancement as heavy research has been conducted to write algorithms capable of recognizing spam from legitimate i.e. legal emails. Emails are filtered based on their content, which includes images and textual data or their header fields which provide information about the sender who are intended for communication. In our project, the spam problem is treated as a classification problem, which is known as pattern recognition problem as well. The user needs to decide only whether an email is spam or not. So an intelligent agent will learn from his decisions dependent on his past and present calculations to sort out whether a future email which is spam or ham. In this paper, the specialized Naive Euclidean model is explained for the email spam problem.

II. ASSOCIATION RULE USING NAÏVE BAYES CLASSIFIER

Research on Text Classification Using Naive Bayes Classifier is used to classify text and the dependability of the Naïve Bayes Classifier with Associated Rules. But this method the negative calculation is ignored for any specific class determination in some cases may fall with accuracy. As e.g. to classify a text it will just calculates the probability of different classes with the probability values of the matched set while ignoring training sets of the unmatched sets of. As rule set in a result if test set matches with a test cases, which has weak or less probability to the actual class, may cause wrong or inaccurate classification i.e. it may give wrong classification.

Steps observed to classify text with Naïve Bayes classifier using association rule are:

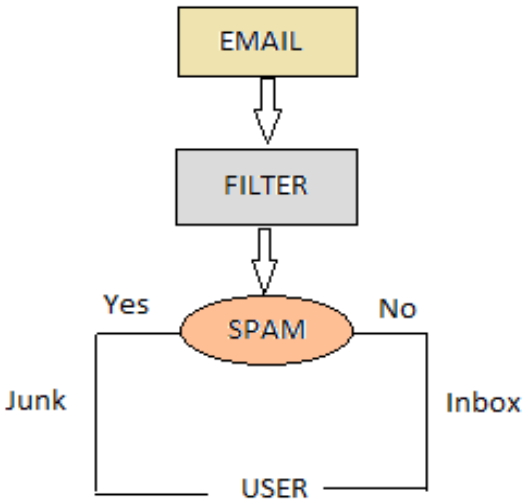
- Each abstracts which are used to train is suppposed as a transaction in the text data.

- The text data is cleaned further by removing unnecessary words i.e. text data is filtered and related to subject words are collected likewise whitespaces. Association rule mining is applied to the set of transaction data where each frequent interval.
- Word set is what from each abstract is considered as a single transaction.
- A large word set is generated or created with their occurrence frequency determined in training.
- After that, Naïve Bayes classifier is used for probability calculation for spam words.
- Before classifying a new document the text data (abstract), target class of which is to be determined as training data set, is again pre-processed similar to the process applied to training data repeatedly.
- Frequent words are viewed as word sets for better result.
- In the list of word sets matching words set(s) or its subset (more than one) collected from training data with that of subset(s) of frequent word set of new document is searched further.
- The corresponding probability values of matched word set(s) for each target class are collected and result of probability is calculated.
- Last of all the probability values for each target class from Naïve Bayes classification algoritm are calculated and the corresponding class of a new document is determined to generate final result value.

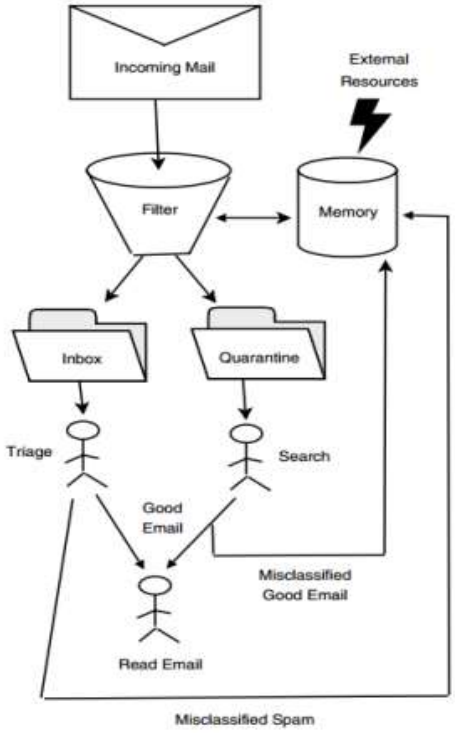
III.FIGURES AND TABLE

List of figures:

1. Block diagram



2. System Architecture



III.CONCLUSION

Yet the correct classification rate is reasonable The Naive Euclidean training procedure which runs extremely fast for the spam detection problem and. It could serve as a baseline in terms of CPU accuracy and time against which other learning methods can be compared to found better result. With the increasing importance of email and the spam commercial email (i.e. spam mails) has become a major problem now-a-days on the Internet. To detect image spam, pattern recognition and computer vision techniques are also required, and indeed several techniques have been recently proposed.

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