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**ABSTRACT:** *Social Networking Websites (SNW's) are nowadays a strong medium to share, communicate, and express personal (sharable) information among the people. It has become a medium of sharing homogeneous interests, activities, backgrounds or real life connections. SNW service allows individual to create a public profile, create a list of users with whom to share their information. SNW enables its user to post different types of data/information such as text, image, audio, video etc. on their post page or in comments. Unfortunately SNW provides very little support about the actual content in post. As an example, any user may text such a post containing some abused language which is not acceptable in public social networking site. In this paper we tried to explore the problems with possible solution on only text content posted in SNW.*

**Keywords:** SNW

## **1. INTRODUCTION**

A social network service consists of a representation of each user (often a profile), his or her social links, and a variety of additional services such as career services [1]. Social network sites are web-based services that allow individuals to create a public profile, create a list of users with whom to share the information to be posted on their page. Social network sites are varied and they incorporate new information and communication tools. Social networking sites allow users to express feelings and share ideas, pictures, posts, activities, events, and interests with people in their network. Web-based social networking services make it possible to connect people who share interests and activities across political, economic, and geographical limitations. In short, a social networking service also social networking website or SNW is a social networks or social relations among the peoples who share homogeneous interests, activities, backgrounds or real-life connections. Nowadays this definition has changed in perspective of social relations among the peoples who share homogeneous interests, activities, backgrounds or real-life connections to social relations among the people from heterogeneous interests, activities and backgrounds. The reason for this is the development of working relationship of industry professionals to make new business contacts, promotions so as to maintain social ties as well as professional, economical and promotional ties as there is large number of SNW users.

**“The things you share are things that make you look good,  
things which you are happy to tie into your identity”-  
Hilary Mason, Chief Data Scientist, Bigly, VentureBeat**

The social relations among the people sharing heterogeneous backgrounds are supposed to be utilized for positive correlates, education, professions with good social impacts. But some of the individuals misbehave in SNW posting some unwanted information which is likely to make

bad impact in society affecting an individual or whole society. So it is necessary to review the contents of information posted by the users in SNW's. In this paper, focusing on only text content in the post, we will develop a filter to identify bad words in the post using the basic preprocessing phases of text mining, text filtering, stop words removal and stemming. There after we make experimental analysis to evaluate our work.

## **2. EXISTING SYSTEM**

Marco Vanetti, Elisabetta Binaghi, elena Ferrari, Barbara Carminati, and Moreno Carullo [2] provide the user to have a straight rule over their own wall to avoid the unwanted messages. Aim of this paper is, user have a direct control over messages posted on their own wall. So automated system called Filtered wall (FW), which have a capacity to filter unwanted message. This system will block the undesired message send by the user. Drawback of this paper is the user will not be blocked; only the message posted by the user will be blocked. Content based message filtering and short text classifier support this system. To overcome the problem of this paper, Blacklist rule will be implemented as future enhancement.

Gediminas Adomavicius [5] gives an overview of the field of recommender systems and describes the current generation of recommendation methods that are usually classified into the following four main categories: content-based, collaborative, Policy-based personalization and hybrid recommendation approaches. This paper also describes various limitations of current recommendation methods and discusses possible extensions that can improve recommendation capabilities and make recommender systems applicable to an even broader range of applications. In this paper, they reviewed various limitations of the current recommendation methods and discussed possible extensions that can provide better recommendation capabilities. These extensions include,

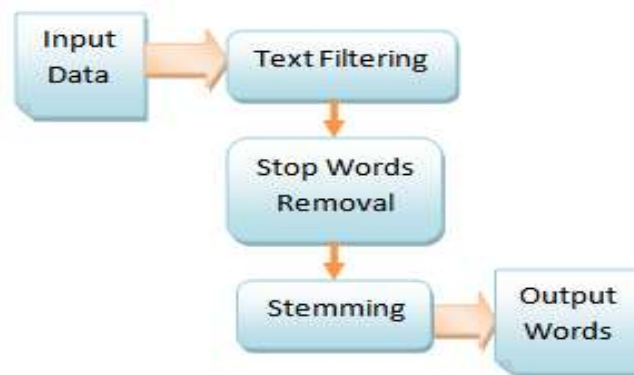
among others, the improved modeling of users and items, incorporation of the contextual information into the recommendation process, support for multicriteria ratings, and provision of a more flexible and less intrusive recommendation process.

Bharath Sriram [6] states micro blogging services such as Twitter, the users may become overwhelmed by the raw data. One solution to this problem is the classification of short text messages. As short texts do not provide sufficient word occurrences, traditional classification methods such as “Bag-Of-Words” have limitations. To address this problem, they propose to use a small set of domain-specific features extracted from the author’s profile and text. The proposed approach effectively classifies the text to a predefined set of generic classes such as News, Events, Opinions, Deals, and Private Messages. They have proposed an approach to classify tweets into general but important categories by using the author information and features within the tweets. With such a system, users can subscribe to or view only certain types of tweets based on their interest.

### 3. PROPOSED METHODOLOGY

In SNW’s people generally use unstructured language and do not care about spelling and accurate grammatical construction for the sentences in the post. Text data in SNW’s is large, irrational, noisy, dynamic and language free. In this study we focus specially on reviewing the content in text information “the words”. Here we are not taking the actual meaning of post into consideration just separate the unwanted words from the whole post. Unwanted words are standard list of words not to be used in public social network website in any sense. This list we consider is to be available with SNW service provider.

This work is basic, simple and conceptual. We will develop a small web application, deploying social networking application to create profile, add friends, post status and post comments. Any comment made by any user will go through a filter. Our aim is create a filter which will separate the unwanted words from the post if any. The design of filter contains the basic phases text preprocessing. The design of filter with text preprocessing operation is shown in figure 3.1. Each phase takes the input and produces filtered output, an input to next phase.



**Figure 1: Text Preprocessing Phases**

There are three phases in this filter: Text filtering, Stop words marking/removing, Stemming.

#### Text filtering

In the text filtering step, all terms that are useless or would introduce noise in filtering process are removed from the input message. Among such terms are:

- HTML tags (e.g. <table>) and entities (e.g. & ; ) if any.
- non-letter characters such as "\$", "%" or "#" (except white spaces and sentence markers such as '.', '?' or '!'), some group of special characters in simplified form, forms the smiley’s used nowadays in messages, post or comments. Note that at this stage the stop-words are not removed from the input.

#### Elimination of Stop Words

After removing noise it is necessary to remove unwanted words. There are 400 to 500 types of stop words such as “of”, “and”, “the,” etc., that provide no useful information about the message. Stop-word removal is the process of removing these words. Stop-words account for about 20% of all words in a typical document. These techniques greatly reduce the size of the searching and matching each word in message. Stemming alone can reduce the size of an index by nearly 40%.

#### Stemming

Stemming algorithms are used to transform the words in texts into their grammatical root form, and are mainly used to improve the Information Retrieval System’s efficiency. To stem a word is to reduce it to a more general form, possibly its root. For example, stemming the term interesting may produce the term interest. Though the stem of a word might not be its root, we want all words that have the same stem to have the same root.

The following is the pseudo code and algorithm for first three phases of preprocessing:

### Pseudo-Code

```
for each document
{
do text filtering;
identify the document's language;
mark stop words;
apply stemming;
}
```

### Algorithm

```
1: d ← input message
{STEP 1: Preprocessing}
2: for all d ∈ D do
3: perform text categorization
4: if d! = null then
Filter text for unwanted symbols
5: apply stemming and mark stop-words in d;
6: end for
```

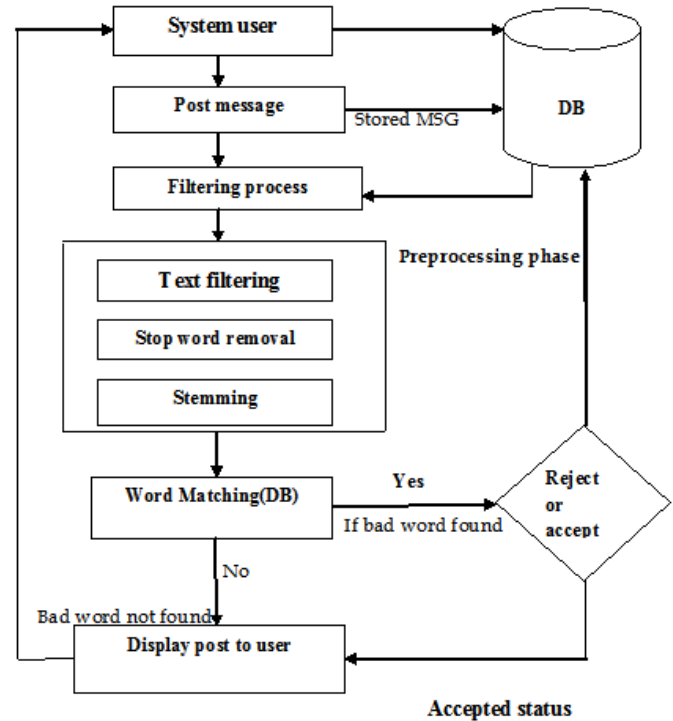
The idea behind using pre-processing phases is to remove from the input message all characters and terms that can possibly affect the quality of group descriptions. Also there is no need to match stop words in the post with the unwanted words, because it is obvious stop words are never the unwanted words. Stemming will help to optimize database, so no need to store every form of unwanted words e.g. kill, kills, killed, killing need to store only pure form kill in database. Moreover, less the number of words less the time required for matching.

### Actual Word Matching

At this phase we will have the words from previous phase. These extracted words will be matched with words in database (a standard list of unwanted words supposed to be available with SNW service provider). If no match found it is straight forward decision to post the text. If any match/matches found, post contains the unwanted words, which means such post shouldn't be allowed to be posted on public page.

At this stage, its service provider's application design to take decision, either to block the post or continue posting with unwanted words marked with special character. If provider blocks such posts then there is no issue, but if provider continues to post message obviously marking unwanted words by some special character making unwanted words unreadable, then there is issue. What if any individual posting text containing unwanted words almost every time? Here is the possible way to handle this issue, decide a threshold value (TV) how many chances (a count of unwanted words) will provider gives to individual with unwanted words in the post. With every unwanted word in post increases the unwanted words count (UWC) of individual. UWC crossing the TV will automatically block the user, who will be able to login but will unauthorize to post anything.

The following DFD figure 2 gives the overview of our proposed methodology.



**Figure 2:** Data Flow of Proposed Work

## 4. CONCLUSIONS AND FUTURE SCOPE

Our study had enlightened the major problems in posting text content in SNW's. The proposed system is one of the possible solutions for the stated problems by developing the filter using text preprocessing phases. We would like to remark that the system proposed in this paper represents just the core set of functionalities needed to provide a sophisticated tool for SNW message/post/comment filtering. One may conduct the survey for list of unwanted words and privacy policy related to content in the post. To evaluate our proposed work there is need to do experimental analysis by the actual sophisticated users of SNW.

The same filtering system can be a complex one involving POS, NLP, Text Mining using Classification, Text Mining using Clustering. Moreover, the filters can be designed to filter the content in other type of information/data share over the SNW's such as audio, video and pictures.

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