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A Customized Filter to apply on Online Social Network (OSN) user walls

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Abstract:

Social networks hosted by a website are graphs of people where edges connect friends. Friendship represents shared interest or trust. A Network consists of one or more Nodes it could be Persons, Organizations, Groups, and Nations, Web Connected by One or More Ties. Users of these sites do not have much control to avoid unwanted content to be displayed on their own private space called in general wall. Therefore a major task of today's online social network is information filtering. To control the abused words posting on a wall using the concept of Content Based Message Filtering (CBMF) and Machine learning Technique. The more sophisticated approach to decide when a user should be inserted in to a Blacklist is implemented by the User feedbacks. The user has the option to suggest people to add in the Blacklist. The particular user then searched in the Blacklist database suppose if the user exists then she/he would be blocked. Also, if the user feedback is more than 50% to block the same user then the user will be blocked. Additionally, before the comment is made public on the post or share made by the user, they have the option to block or approve it. This concept avoids the usage of abused words in the content and dissatisfaction of comments.

Keywords:- **Online Social Network, Content based Message Filtering, Filtering Techniques**

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I.   Introduction

Social networks are the hottest online trend of the last few years to meet people and share information with them. Users of these online networking sites form a social network, which provides a powerful means of organizing and finding useful information. Online Social Networks enables its users to keep in touch with friends by exchanging several type of content including text, audio and video data. Users of these sites do not have much control to avoid unwanted content to be displayed on their own private space called in general wall. However, no content-based preferences are supported and therefore it is not possible to prevent undesired messages, such as political or vulgar ones, no matter of the user who posts them .Therefore a major task of today's online social network is information filtering. We exploit Machine Learning (ML) text categorization techniques to automatically assign with each short text message a set of categories based on its content. The existing system provides the control over the user to define the contents to be blocked or displayed on filtered wall by means of Filtering rules. Filtering rules are specified on the basis of user profile as well as user social relationship. . For example, Facebook allows users to state who is allowed to insert messages in their walls (i.e., friends, friends of friends, or defined groups of friends). However, no content-based preferences are supported and therefore it is not possible to prevent undesired messages, such as political or vulgar ones, no matter of the user who posts them. The proposed system doesn't provide the control to the

user instead admin or Author who define the rules can filter the data or message before it is posted on a general wall.The short text classification strategy on Radial Basis Function Networks (RBFN) for their proven capabilities in acting as soft classifiers, in managing noisy data and intrinsically vague classes. When the user's shared contents falls under Nonneutral category then the count of the specific category used in the content has been displayed for the user and it is blocked before it is posting on a wall. The more sophisticated approach to decide when a user should be inserted in to a Blacklist is implemented by the User feedbacks. The user has the option to suggest people to add in the Blacklist. The particular user then searched in the Blacklist database suppose if the user exists then she/he would be blocked. Also, if the user feedback is more than 50% to block the same user then the user will be blocked. Additionally, before the comment is made public on the post or share made by the user, they have the option to block or approve it. This concept avoids the usage of abused words in the content and dissatisfaction of comments. Radial Basis Function Networks (RBFN) categorizes short messages as Neutral and Nonneutral. In the second stage, Nonneutral messages are classified producing gradual estimates of appropriateness to each of the considered category.

II. Filtering Techniques

The main goal of information filtering system is to filter unwanted content from input data before it is displayed on a general wall to the end user. It uses the content based message filtering and Machine learning Technique to filter the abused or sensitive words. This concept avoids the usage of abused words in the content.

A. Content based Message Filtering

This Filter takes input the content in the message and compares with the abused words or sensitive words which have been collected and stored for this purpose. Suppose if the content falls in to that category the specific content will not be posted on a general wall. Content based message filtering

concentrates on the specific words. This filtering is applied before the message is posted on a wall.
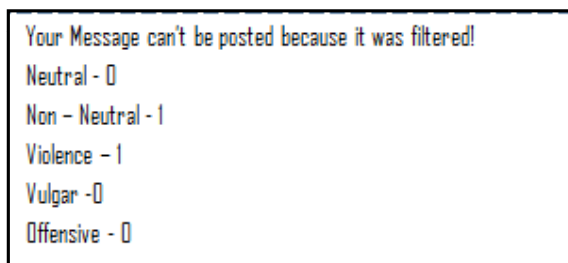
B. Machine Learning Technique

Radial Basis Function Networks (RBFN) categorizes short messages as Neutral and Nonneutral. In the second stage, Nonneutral messages are classified producing gradual estimates of appropriateness to each of the considered category. The short text categorization addresses a hierarchical two level classification process. The first-level classifier performs a binary hard categorization that labels messages as Neutral and Non neutral. The second-level classifier performs a soft-partition of Non-neutral messages assigning a given message a gradual membership to each of the non-neutral classes. Among the variety of multiclass ML models well suited for text classification, we choose the RBFN model for the experimented competitive behavior with respect to other state-of-the-art classifiers.

III. Filtering Rules and Blacklist Management

User can state what contents should be blocked or displayed on filtered wall by means of Filtering rules. Filtering rules are Specified on the basis of user profile as well as user social relationship.FR is dependent on following factors

- Author
- Creator Spec
- Content Spec
- Action

An author is a person who defines the rules. Creator Spec denotes the set of OSN user and Content Spec is a Boolean expression defined on content. Action denotes the action to be performed by the system on the messages matching content Spec and created.

Your Message can't be posted because it was filtered!
Neutral - 0
Non – Neutral - 1
Violence – 1
Vulgar -0
Offensive - 0

BL users are those users whose messages are prevented independent from their contents. BL rules enable the wall owner to determine users to be blocked on the basis of their profiles and relationship with wall owner. This banning can be done for a specified period or forever according wall owner's desire. Like FR, BL is also dependent on author, creator specification and creator behavior.

III. System Architecture
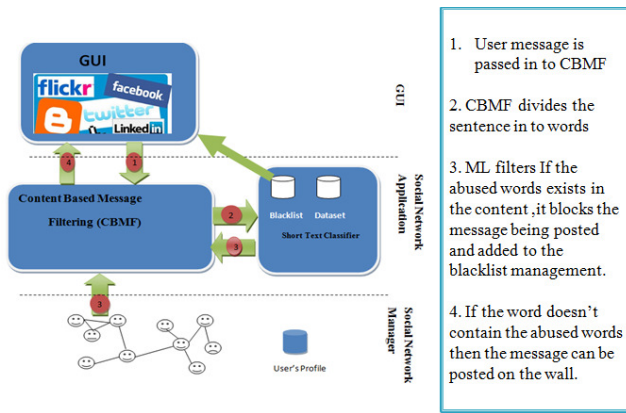
Filtered Wall Architecture

Filtered wall architecture is Three-tier architecture

A. Social Network Manager

B. Social Network Application

C. Graphical User Interface

Graphical User Interface

GUI provides the Interface to the user. The development of a GUI and a set of related tools to make easier BL and FR specification is also a direction to investigate, since usability is a key requirement for such kind of applications. The user can view and operate all the functions in the Online Social Network. Filtering Rules are used to filter the unwanted messages. It also Provides Blacklist for the user. The User feedback can be provided for the most sophisticated approach to add the user in to the Blacklist.

Social Network Manager :

It is the Initial layer maintains the data regarding the user profile. The user information can be maintained for the future purposes. When the new user try to create a profile the information can be validated with the database. If the user doesn't exist in the user database and the Blacklist, then the profile will be created.

Social Network Application

The Social Network Application consists of Content Based Message Filtering (CBMF) and Short Text Classifier. It is the important layer for message categorization. Black list is maintained for user.

Message Filtering Process

A. Identifying Authorized Users
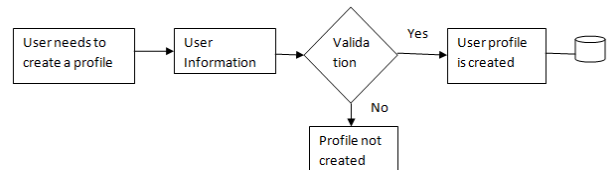
User needs to register themselves with the basic details. Once the profile is created the information is validated with the database. If the user details already exist in the database then it will check with the Blacklist management database. Suppose if the data matches then the profile will not create else the Profile will be create successfully and details are stored in the database. The User can make friends with their own interest to Create a network.

### B. Network formation with Friends
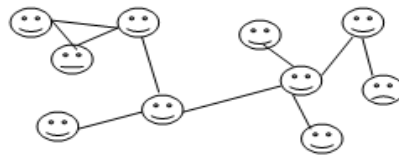
When the User profile has been created they can use their profile. The user needs to login with their

username and password. The Friend request can be made to the other friends in the same social network and form the network to share the Photos, Images and whatever they wish to do.

C. Message Posting on a wall

Suppose the user wishes to post some messages on a wall. There are few techniques which have been used to filter the message from the sensitive words used in the content. First, the message has been checking for the anonymous word used in the context by using the Content Based Message Filtering (CBMF) and Short Text classifier using the dataset stored in the database. If the content has sensitive word found then the post has been blocked and notified user that the post is blocked because it has the abused or sensitive words involved in the content. The process can be repeated for 3 times else the user's profile can be blocked and the user can no more create the profile. Otherwise the message can be posted on a wall. This is the customized filter applied before the message is posted on a wall.
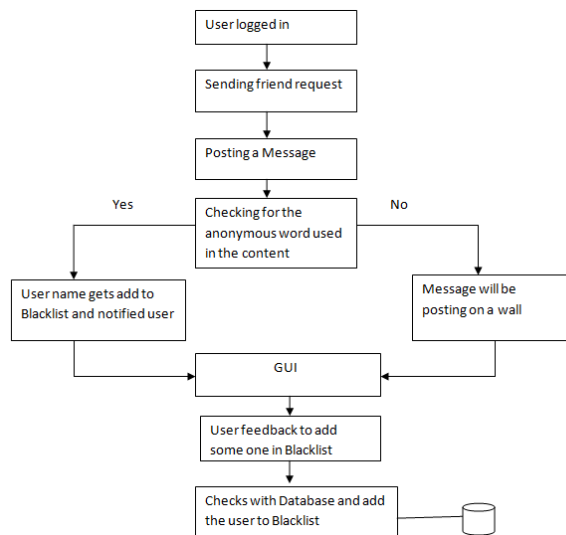
finished. To enhance flexibility, such information are given to the ystem through a set of rules, hereafter called BL rules. Such rules are not defined by the SNMP. Therefore, they are not meant as general high-level directives to be applied to the whole community. Rather, we decide to let the users themselves, i.e., the wall's owners to specify BL rules regulating who has to be banned from their walls and for how long. Therefore, a user might be banned from a wall at the same time, being able to post in other walls. Similar to FRs, our BL rules make the wall owner able to identify users to be blocked according to their profiles as well as their relationships in the OSN. Therefore, by means of a BL rule, wall owners are, for example, able to ban from their walls.

users they do not directly know (i.e., with which they have only indirect relationships), or users that are friend of a given person as they may have a bad opinion of this person. This banning can be adopted for an undetermined time period or for a specific time window. Moreover, banning criteria may also take into account users' behavior in the OSN. More precisely, among possible information denoting users' bad behavior we have focused on two main measures. The first is related to the principle that if a user's content has the abused or sensitive words then She/he would be inserted in to the Blacklist. This principle works for those users that have been already inserted in the considered BL at least one time. In contrast, to catch new bad behaviors, we use the Relative Frequency (RF) that let the system be able to detect those users whose messages continue to fail the FRs.

The two measures can be computed either locally, that is, by considering only the messages and/or the BL of the user specifying the BL rule or globally, that is, by considering all OSN users walls and/or BLs. The more sophisticated approach to decide when a user should be inserted into a BL has been implemented using the User Feedback.

D. Blacklist Management

A further component of our system is a BL mechanism toavoid messages from undesired creators, independent from their contents. BLs are directly managed by the system, which should be able to determine who are the users to be inserted in the BL and decide when users retention in the BL is

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The Count of words used with the category
Neutral – 0
Non – Neutral – 1
Violence – 1
Vulgar - 0
Offensive – 0
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User can view the list of words usage falling in the specific category. The User can suggest adding the specific user in to the Blacklist. If the Suggested user exists in Blacklist database then the user is blocked even the count of sensitive words usage in one. Generally the particular user will be blocked only after the count is greater than 3 times. With the use of User feedback this approach is implemented.

CONCLUSION

In this project, we have presented a system to filter undesired messages from OSN walls. It mainly prevents the user from displaying unwanted messages. Many empirical studies have shown that average OSN users have difficulties in understanding also the simple privacy settings provided by today OSNs. The flexibility of the system in terms of filtering options is enhanced by using short text classification and flexible rule based machine learning concepts. Filtered wall is a system to filter undesired messages from OSN walls. This system approach decides when user should be inserted into a black list. Moreover, the flexibility of the system in terms of filtering options is enhanced through the management of BLs.

The more sophisticated approach to decide when a user should be inserted in to a Blacklist is implemented by the User feedbacks. The user has the option to suggest people to add in the Blacklist.

The particular user then searched in the Blacklist database suppose if the user exists then she/he would be blocked. Also, if the user feedback is more than 50% to block the same user then the user will be blocked. Additionally, before the comment is made public on the post or share made by the user, they have the option to block or approve it. This concept avoids the usage of abused words in the content and dissatisfaction of comments.

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