A Filter System of Unwanted Messages from OSN User Walls

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ABSTRACT:- One fundamental issue in today On-line Social Networks (OSNs) is to give users the ability to control the messages posted on their own private space to avoid that unwanted content is displayed. Up to now OSNs provide little support to this requirement. To fill the gap, in this project, the proposed system allowing OSN users to have a direct control on the messages posted on their walls. This is achieved through a flexible rule-based system, that allows users to customize the filtering criteria to be applied to their walls, and a Machine Learning based soft classifier automatically labeling messages in support of content-based filtering.

Keywords: On-line Social Networks, Information Filtering, Short Text Classification, Policy-based Personalization.

I. INTRODUCTION

As we know online social networking sites are more interactive channel for people to share information. Such social networking sites help us to share various information through Multimedia sources like video, audio etc. It becomes easy to find out the friend who is not in our contact. Only thing is that they also should be active on such sites. Web-based services allows user to create their own profile and add to other people in their account so they can exchange information or any type content [1]. Web-based services are used to extract the significant information from large quantity of data respectively. For example Facebook is the most popular social networking site in which millions of people have opened their user account. Facebook provides all type of services like adding friends, recommending friends, sharing of images, audio and video etc. But Facebook also provides facility to user to post the message on users walls. So, there is possibility that posted message could be vulgar or offensive one. Which may cause serious problems like harassing or blackmailing can also happen, it means instead of all those advantages there are some disadvantages with Social networking sites. Thus, we can say that OSNs provide poor security to user. To avoid such types of problems we can use Information filtering. Information filtering is nothing but it checks whether the content of message is pleasant or not. If the content of message is impolite then Information filtering technique will not allow the person to post on wall. There are various filtering methods that are available to avoid offensive messages such as content-based filtering method, policy-based filtering method, and collaborative filtering method. Machine Learning (ML) text categorization technique is also used to instinctively classify the each and every word of a message [2],[4]. The Short text classification technique is based on the Radial Basis Function Networks (RBFN). Here RBFN perform text categorization on noisy data. RBFN apply the hierarchical neural network model to classify data on basis of whether the content of a message is neural or non-neural .If the message is neural then OSNs allows the user to post the message on wall but if message is non-neural then it will not be allowed.

II. TYPES OF FILTERING

Information filtering methods are being used to filter unwanted message. Following are the basic Information filtering methods available [5]:

- o   Content-based filtering
- o   Policy based filtering
- o   Collaborative filtering

A. Content-based Filtering

Content-based filtering method helps to check the actual data of the messages. Social networking sites support the content-based filtering by examining the users likes and dislikes, for example Orkut and Facebook sites checks the users profile and according to a profile match they suggest you as a friend. It would suggest you the people who belong to the same work field or social circle as you. The main goal of the content-based filtering is to prevent and secure our users from unwanted comments or posts.

B. Policy-based filtering

Policy-based filtering method is completely based on a set of rules or more commonly termed as criteria. System defines its own set of rules or policies according to which action is taken. Twitter is one good application example of policy-based filtering method because it allows user to set the privacy on tweets. Profile owners can set security on his tweets like who should read his post or who should not.

C. Collaborative filtering

Collaborative filtering method depends on user interests, choices, likes and dislikes. It helps to suggest items to customer based on previous likes. Only high rated item get suggested to a user and unrated items remain in shelf. There is no scope to sell out unrated item which becomes a main drawback of collaborative filtering method. Another drawback to this filtering method is that it requires a large database to keep track of item scope[10].
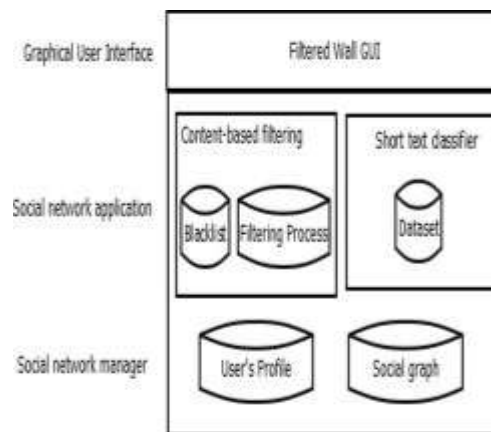

Figure 1. Filtered Wall (FW) architecture

III. CONVENTIONAL SYSTEM

Social networking sites support to post or express your own thoughts but it is not necessary that everyone will express their thoughts in good manner or in polite words. As we know Facebook allows user to post the message on particular wall even if they do not know each other. So it may cause serious problem to all those users who are active and are affected individually by their social image.

A.   Disadvantages of conventional system

   1. Since some social networking sites do not support content-based filtering approach there is possibility to get vulgar or abusive messages on particular wall.

   2. Ad hoc structuring is an important task instead of focusing on web based features[10].

IV. IMPLEMENTATION

There are six modules present in this implementation. The Modules are:

- ❖   Registration
- ❖   Login
- ❖   Update Status
- ❖   Update Image
- ❖   Reply for Comments
- ❖   Admin

Registration Module:

Here user gives his/her personal information to login to the site. If the user name that entered is valid and available then an user id is generated. Using that id the user can login further.

Login:

User can login with the provided user id and password to share the information.

Update Status:

Here the user is allowed to update the status message available in their home page that is viewed by their friends. The text is validated according the rules set by the Administrator

Update Image:

Users can update their profile image, that is shown in their homepage. This change reflects to all the other users when they visit the user's page.

Reply for Comments:

The user can reply for the comments that are posted by other friends of the user. User can also delete particular comments.

Admin Module

Administrator is the sole controller of the site. This module can set the restriction level of words, and can view all the users of the system. This module can view the filtered words performance in chart representation.

V. COMPARATIVE ANALYSIS OF FILTERING METHODS

TABLE I . COMPARATIVE ANALYSIS TABLE

Parameters	Content-based filtering	Policy based filtering	Collaborative filtering
Efficiency	Highly Efficient	Moderately Efficient	Low Efficient
Flexibility	High Flexibility	Less Flexibility	Less Flexibility
Usability	Need to improve the usability	Highly useable.	Need to improve the usability
Accuracy Recommendation	Produce Accurate Recommendation	Does not produce Accurate Rec-ommendation	Does not produce Accurate Rec-ommendation

Efficiency: Content-based filtering provides high efficiency because in Filtered Wall architecture [2] it uses Machine Learning (ML) paradigm which helps it to categorize input message into neural or non-neural. Here neural means decent input and non-neural means unpleasant input. Ultimately ML paradigm provides security to the system. Policy-based filtering method is moderately efficient because you can set various policies as per your system requirements but sometimes it is difficult to meet all the requirements of a system. Collaborative filtering provides less efficiency because it is based on recommendation strategy. This filtering method recommends only highly rated items or goods [3].

Flexibility: Content-based filtering helps us to enhance flexibility of a system. In Filtered Wall architecture [2] it provides blacklist management. Here blacklist is an advanced feature provided by FW architecture to block suspicious users. Policy-based filtering provides less flexibility as it is not possible to cover all the required policies regarding a system under consideration. Collaborative filtering is less flexible because only selective items get good demands.

Usability: Needs to improve usability by investigating various tools to development of filtering rules, GUI and BL in content-based filtered wall architecture. Policy-based is highly useable only when it has set all the policies that meet the exact goal of the system but in collaborative, needs to improve the usability by enhancing recommendation strategy [1].

Accuracy Recommendation: In case of content-based filtering which produces accurate recommendation for text categorization in neural or non-neural [1],[2],[5]. In contrast Policy-based filtering does not produce accurate recommendation because covering all policies of system is not possible every time. Same is the case of Collaborative filtering method which does not produce accurate recommendation as it only suggests high rated goods[10].

VI. CONCLUSION

Today various social networking sites are available which make people remain in constant touch with each other. Sharing any type of data has become easy. There are great advantages of such social networking sites excepting a few minor drawbacks like poor security which create huge problems to people when they were active on such sites. As we have seen Facebook allows users to post comment on another users wall even when they were unknown to each other. But if that comment is a vulgar one then it may cause serious problem to user reputation. To avoid such a problem Information filtering is used to filter the content of the message. So we have analyzed various Information filtering methods like content-based filtering, policy-based filtering, and collaborative filtering in this paper. Content-based filtering method is best filtering method than any other methods, because it has filtered out bad or non-neural words from the input message and allows posting only pleasant comment to be posted on a user's wall. This will help us to avoid unwanted messages from ever spoiling reputation which carries the utmost importance in the world of socialization.

VII. REFERENCES

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