

# A Robust Filtering System for Protecting Online Social Network User Walls

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**Abstract--** Due to the invent of Internet and Web 2.0 standard, social networking has become very prevalent and people of all walks of life have virtual communities over social networks. Social networks provides platform for virtual meetings without having time and geographical restrictions. Online social networks provide platform for instant communication, sharing of views and so on. Now a days to control the messages posted on their private space Online Social Networks allow their users to avoid the unwanted content. The challenging problem of OSNs is it provides little support to this requirement. To control messages it follows a flexible rule-based system, content-based filtering, Machine Learning based soft classifier. The proposed system is an extension to the existing system. Besides, it also explores strategies to find modifications to the profile attributes and also when a user has blocked automatically user will receive a mail notification.

**Keywords--** On-line social networks, machine learning based soft classifier, content based filtering, short text classifier.

## I. INTRODUCTION

Today Online Social Networks (OSNs) become very popular communicating medium to communicate, distribute and disseminate a huge amount of human life information. Online Social Network is a web based services in which individuals will able to produce a list of users with whom to distribute connection, view and cross the connections with in the system. Daily interactions imply the exchange of several categories of data, including free audio, video, image, and text content. Most popular Online Social Networks are facebook, twitter, LinkedIn, MySpace etc. Most social network services provide to interact over internet, such as e-mail and instant messaging. Social network sites are different from one another and providing new information and tools of communication such as mobile connectivity, video/photo/sharing and blogging. OSN user walls to facilitate users. People of different life prefer OSN web sites, it is essential to control over messages being posted to user walls. Otherwise, malicious content can be posted. The prevention of such content can help users to have genuine conversations that make sense. Content-based filtering is one categories of filtering that suggest items for a user based on the information of previously evaluated items. Information filtering systems are developed to divide a group of dynamically generated information distributed asynchronously by an information producer. In content-based filtering each and every user imagine operating independently. Content based filtering is mainly depends on the use of the machine learning paradigm. In content based filtering more critical filtering systems include multi label text categorization directly labeling messages into partial thematic categories. Machine learning based classification is divided into two levels. In the first level classification process the messages are labeled as neutral and non neutral by a binary hard categorization. The first level classifier filtering task is subsequent to the second level filtering task. In second level finer grained classification process is performed and it accomplishes a soft splitting of non neutral messages. With the various types of multi class machine learning models best suitable for text classification, in that we select the RBFN model. The important advantage of RBFN classification is non linear. We use machine learning text categorization techniques based on its content. The system provides important rule that exploiting a flexible rule based system to specify filtering rules, by using that filtering laws users can state what data should not be visible on their own private walls. Filtering rules provide a variety of various filtering criteria that can be grouped and customized according to the user needs. Filtering rules use user profiles, user relationships and also the output of the machine learning categorization process to be enforced. And also the system maintains the user defined blacklists, list of users that are transiently blocked to post any kind o messages on a user wall. Flexible rule based systems are used to manipulate, store knowledge to translate information in a useful way.



Fig 1: Online Social Networks (OSN)

## II. LITERATURE REVIEW

Marco Vanetti [1], proposed OSN that has not been provided so far. Online Social Networks are most popular communicating medium. Now a days, OSNs provided to filter unwanted messages on own private walls. In this paper a robust filtering system is used to prevent unnecessary messages from OSN user walls. We propose an automated system that is called Filtered Wall.

T.Suganya and T.Hemalatha [2], proposed a Spam filtering by using machine learning technique in online social networks. Spam is one of the factors that affect the online social networks. A machine learning based spam classification and content features has been implemented. Based on the results it is observed that precision, recall and F-measure of spam classification have increased due to the mixture of machine learning and content based features.

Ms.Shruti, C.Belsare and Prof. R.R.Keole [3], presented a paper on filtering of unwanted messages using content mining. To filter unwanted content, created a message system that randomly notifies unwanted messages instead of blocking or detecting modifications to profile attributes.

Miss.Rashmi, R.Atkare and Prof. P.D.Soni [4], introduced a paper on Survey of filtering system for OSN. They presented a system used to filter undesired messages from OSN walls by using a machine learning soft classifier to accomplish customizable content dependent filtered rules. By managing black lists system is enhanced through in terms of filtering options.

Dhruv Vashista and G.Sivagami [5], presented filtering of undesired messages from online social networks. The system used a machine learning soft classifier to differentiate the contents as neutral and non neutral and applying the filtering rule. The flexibility of system is improved through the black lists.

J.Sangavai and R.Gopi [6], recommended a filtering technique that is Content based filtering with multiparty access control for OSNs. The multiparty policy specification in addition multiparty authorization requirements used for access control. In this way undesired messages are filtered and access control is provided.

Sujapriya.S, G.Immanuel Gnana Durai and Dr.C.Kumar Charlie Paul [7], presented a paper on filtering unwanted messages from online social networks using rule based technique. Mainly investigated a tool that will automatically suggested trust values for those contacts user can not identified individually. This tool proposed exception assessment based on users procedures, performances which involves in enhancing OSN with assessment methods. The system proposed in this paper is the core set of functionalities that are necessary to maintain a attenuated tool for OSN message filtering.

M.Saravanan, D.Jeeva [8], proposed Content based message filtering and access control in online social networks. In this paper specifies the protection of unwanted messages for social networks and also the adjustability of the system in the way of filtering options through the management of black lists.

### III. SYSTEM ARCHITECTURE

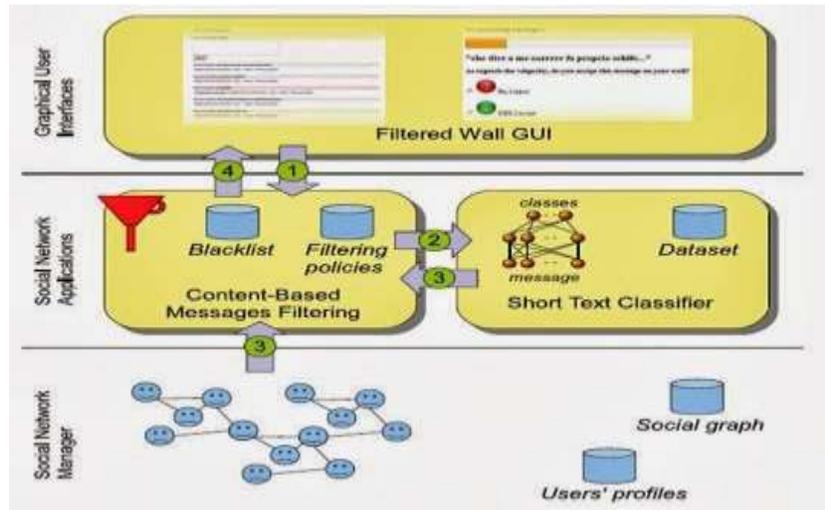


Fig 2: Filtered Wall Architecture

The architecture of OSN is divided into three-layers. The first layer is called Social Network Manager (SNM), it mainly provides the OSN functionalities (i.e., profile and relationships) and maintains data regarding to the user profile. The second layer is called Social Network Applications it consists of short text classifier and content based message filtering. This is important layer for message categorization. This layer maintains blacklist for users. It provides the external Social Network Applications (SNAs). SNAs may require an additional layer that is Graphical User Interface (GUI). This layer consists of an interface which allows the user to post and this interface is provided by the filtered wall. These filtering rules are used to filter unwanted messages. It provides blacklist for user. By using this resource architecture, the enhanced system is arranged in the second and third layers.

### IV. PROPOSED SYSTEM

To enhance a robust system that automatically filters unnecessary messages from OSN user walls. Based on machine learning techniques we can easily filter unnecessary messages. The machine learning categorization technique is used to divide the messages based on its information. The proposed system is an extension to the existing system. Besides, it also explores strategies to find modifications to the profile attributes and also when a user has blocked automatically user will get a mail notification.

#### A. Machine learning based soft classifier

Machine learning based classification is divided into two levels. In the first level classification process the messages are labeled as neutral and non neutral by a binary hard categorization. The first level classifier filtering task is subsequent to the second level filtering task. In second level finer grained classification process is performed and it accomplishes a soft splitting of non neutral messages. With the various types of multi class machine learning models best suitable for text classification, in that we select the RBFN model.

#### B. Content based filtering

Recommender systems works in one of two ways Collaborative filtering and content based filtering. By using this the user's profile is in comparison to some reference characteristics. These characteristics will start from the information item or the user's social environment. Currently the problem is not only to find a way to filter the information, but the way of these systems requires learning independently the information needs of users. Based on this result, a content-based filtering system selects information items based on the correlation between content of the items and the user preferences as opposed to a collaborative filtering system that elects items based on the correlation between people with similar preferences. The activity of filtering can be modeled, in fact, as a case of single label, binary classification, partitioning incoming documents into relevant and non relevant categories.

### C. Short text classifier

The problem of Short Text Classifier is seeming likely dividing the short texts is accepted in our approach as a multiclass soft classification process gathered in two important phases: ML-based classification and text representation. The first level filtering problem forward the subsequent and the second level filtering problem performs a soft partition of Non neutral messages allows a given message to each of the non neutral classes. In this view critical features are the summary of a set of characterizing and segregate features grant the representation of hidden concepts and the group of a total and consistent set of examples. Our approach is aimed at evaluating and designing different representation techniques in aggregation with a neural learning strategy to semantically categorize short texts.

## V. CONCLUSION

In this paper, we provide robust filtering system for protecting Online Social Networks. Now a days, Online Social Networks are very popular. When user should be placed into a black list is decided by this system move near. Filtered wall has different type of applications in OSN walls. By using this filtering system we can easily control the unwanted messages posted on their walls. And also explore strategies to find modifications to the profile attributes and also when a user has blocked automatically user will get a mail notification.

## VI. FUTURE WORK

In future, we plan to provide strategies and techniques to filter unwanted images and videos posted on their walls and plan to introduce online learning paradigm to include label feedbacks from users.

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