



## RULE BASED FILTERING UNWANTED MESSAGES FROM OSN SYSTEMS

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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 paper, we propose a system allowing OSN users to have a direct control on the messages posted on their walls. This paper focuses on a new incremental method for updating approximations of system wall, while objects in the information system dynamically alter. It discusses properties of information granulation and approximations under the dynamic environment while objects in the universe evolve over time. The variation of an attribute's domain is also considered to perform incremental updating for approximations under the system walls. Finally, an extensive experimental evaluation validates the efficiency of the proposed method for dynamic maintenance of VPRS approximations.

**Keywords:** Facebook, OSNs, Filtered Walls, BL(Blacklist) ,Machine learning, GUI(Graphical User Interface), Dicom FW.

### I.INTRODUCTION

Online Social Networks (OSNs) are today one of the most popular interactive medium to communicate, share, and disseminate a considerable amount of human life information. Daily and continuous communications imply the exchange of several types of content, including free text, image, audio, and video data. According to Face book statistics one average user creates 90 pieces of content each month, whereas more than 30 billion pieces of content (web links, news stories, blog posts, notes, photo albums, etc.) are shared each month. The huge and dynamic character of these data creates the premise for the employment of web content mining strategies aimed to automatically discover useful information dormant within the data. They are instrumental to provide an active support in complex and sophisticated tasks involved in OSN management, such as for instance access control or information filtering. Information filtering has been greatly explored for what concerns textual documents and, more recently, web content. However, the aim of the majority of these proposals is mainly to provide users a classification mechanism to avoid they are overwhelmed by useless data. In OSNs, information filtering can also be used for a different, more sensitive, purpose. This is due to the fact that in OSNs there is the possibility of posting or commenting other posts on particular public/private areas, called in general walls. Information filtering can therefore be used to give users the ability to automatically control the messages written on their own walls, by filter in out unwanted messages.

So how many of you are on facebook? Not a question to be asked as the answer is known to everyone. Now-a day we all are online-social animal rather than just

social animal. Majority of people prefer online medium to communicate with their friends, family and their society. We all are using one or more of the networking site for communication that are available in market. Online Social Network are today one of the most popular interactive medium to communicate, share and announce a considerable amount of human life information. We share different kinds of content, if including free text, video, audio image data. According to Facebook statistics average user create 90 pieces of content (web links, blog post, notes, news stories, photo album, etc.), whereas more than 30 billion pieces of content are shared each month. The huge and dynamic character creates the room for web content mining techniques aimed to reflect only useful information. They can provide active support to OSN management, such as for access control and information filtering. Information filtering has been greatly explored for what concerns textual documents and mostly web content. However the main aim of all the proposals is to provide user a classification mechanism to avoid useless data. This is due to the fact that in OSNs there is possibility or commenting on other posts particularly public/private areas, called in general walls. Information gathering can there be used to give users the ability to control on the messages written on their wall, by filtering unwanted messages. And we all will agree that this is the key OSN service. For example, Facebook allows user to state who is allowed to insert message in their walls(i.e., friends, friends of friends, or defined groups of friends).however no content based preference are supported and therefore it is not possible to prevent undesired messages such as political or vulgar ones, no matter of the user who post them. Providing this service is not only the matter of using previously defined web content mining techniques for a different application, rather it requires to



design additional classification strategies and also wall post comprises of short text and traditional methods have limitations. The aim of the present work is to present or propose a automated system called FW (Filtered Wall), able to filter unwanted messages from OSN wall. We exploit Machine Learning (ML) text categorization techniques to automatically assign with each short text a set of categories based on its content. As far as learning model is concerned, we confirm the use of neural learning which is today recognized as one of the most efficient solution in text classification [4]. We base the overall short text classification strategy on Radial basis Function Networks (RBFN) for their proven capabilities in acting as soft classifier.

We implement a neural model within a hierarchical two level classification strategy. In the first level, the RBFN categorizes short messages as Neutral and Non-Neutral; in the second stage, Non-Neutral messages are classified producing gradual estimates of appropriateness to each of the considered category. Besides classification facilities, the system provides a powerful rule layer exploiting a flexible language to specify Filtering Rules (FRs), by which users can state what contents, should not be displayed on their walls. FR can contain different criteria to customize according to user needs more precisely, FRs exploits user relationships user profiles as well as user defined Blacklists (BLs).

The aim of this work is so to propose and experimentally value an automatic system, referred to as Filtered Wall (FW), able to filter unwanted messages from OSN user walls. We have a tendency to exploit Machine Learning (ML) text categorization techniques [4] to mechanically assign with every short text message a group of classes supported its content. The major efforts in building a strong short text classifier (STC) area unit targeted within the extraction and choice of asset of characterizing and discriminant options. The solutions investigated during this paper area unit A Nextension of these adopted in an exceedingly previous work by US [5] from that we have a tendency to inherit the learning model and therefore the stimulant procedure for generating pre-classified information. The first set of options derived from endogenous properties of short texts, is enlarged here as well as exogenous information associated with the context from that the messages originate. As so much because the learning model worries, we have a tendency to ensure within the current paper the employment of neural learning that is these days recognized as one of the foremost economical solutions in text classification [4]. In specific, we have a tendency to base the short text classification strategy on Radial Basis perform Networks (RBFN) for his or her

proven capabilities in acting as soft classifiers, in managing noisy information and as such obscure categories. Moreover, the speed in performing arts the educational part creates the premise or AN adequate use in OSN domains, similarly as facilitates the experimental analysis tasks

## II. RELATED WORK

The survey is contrived among two different types of Filtering systems: social filtering and content-based systems. In social filtering system the documents are extracting and filtered based on reviews of the prior readers where as in content based system the content is extracted from the documents and then filtering will be done. The Content-based message filtering for Online Social Networks is implemented in this paper based on the Machine Learning Technique. In present work the resemblance with Policy-Based Personalization as well as Content-Based Filtering for Online Social Networks. The review of these methods

### 2.1 Content-Based Filtering

The Information Filtering systems are planned to categorize overflow of explosively produced data accelerated asynchronously by data producer and to satisfy his/her requirements those information is presented to the user. The Information Filtering and Information Retrieval are the roots for Content-Based filtering. In Content-Based Filtering the information selects based on the creation between the user desires and content of the items. In Information Filtering e-mail was the original frontier of recent work, being papers have addressed varied frontiers including deep network resources, news wire composition, Internet news composition. Content-Based filtering is mainly classified as text categorization as it majorly precedes documents with text content. According to Francesco, to evaluate a collection of documents and rendering of items using content-based filtering technique based on previously rated by a user, and then forms a profile of the user satisfaction. There are three steps based on consign process:

Content reviewer: Defining the contents of the items is major responsibility of the process and feature extraction strategy selects the information or definite characteristics of the item.

- Profile learner: The user profile is constructed by the process, it will gather data model of the users desire and try to speculate data.
- Filtering elements: The user profile characteristics and item characteristics matched by the process.

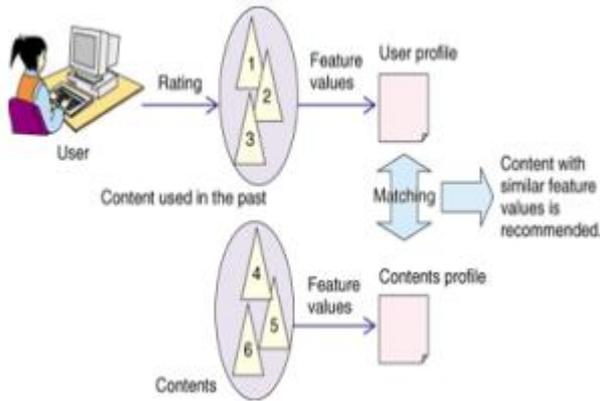


Fig1: Content-Based Filtering

## 2.2 Policy-Based personalization

In this personalization approach, a classification strategy has been implemented to classify short text messages to off tremendous users of personal blog services by raw data. The system focuses on Facebook and companion a set of categories with every message narrate its content then; the public friends can see only certain type of comments or messages based on their concern. In other way, Film Trust application is implemented by Golbeck and Kuter, it provide OSN trust to access personalized origin information and communication with users on website. Because in present system it doesn't provide any Filtering technique by which the user can't achieve filtering unwanted information from public. Our system is implemented Filtering Rules (FRs) and Black List (BL) mechanism to filter unwanted content from OSNs users' private space.

## III.EXISTING SYSTEM

We believe that this is a key OSN service that has not been provided so far. Indeed, today OSNs provide very little support to prevent unwanted messages on user walls. For example, Face book 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. Providing this service is not only a matter of using previously defined web content mining techniques for a different application, rather it requires to design ad-hoc classification strategies. This is because wall messages are constituted by short text for which traditional classification Methods have serious limitations since short texts do not provide sufficient word occurrences. The analysis of related work has highlighted the lack of a publicly available benchmark for comparing different approaches to content-based classification of OSN short texts. One thousands two

hundred and sixty-six messages from publicly accessible Italian groups have been selected and extracted by means of an automated procedure that stores the messages body and the name of the group from web page Most of the system wall messages have assumed negligible storage overhead without considering that each group of friends messages could be with a limited buffer space. A short text classification using a statistical model named prediction by partial matching (PPM), with text containing complex terminology and prove the classifier on medical texts from newsgroups, clinical texts of server walls. While it works well for application with moderate data set size. Which differ for the adopted feature extraction methods, model learning, and collection of procedure maps text. Several experiments prove that Bag of words (BoW) approached yield good performance and prevail in general over more sophisticated text representation that may have superior semantics but The viation of principal direction might not be significant when the size of the data set is large. Note that buffering and forwarding unlimited number of messages may also cause intolerable resources and nodal energy consumption; and it is imperative to set up buffer limitations at the filtered the unwanted messages.

## IV. PROPOSED SYSTEM

The aim of the present work is therefore to propose and experimentally evaluate an automated system, called Filtered Wall (FW), able to filter unwanted messages from OSN user walls. 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 major efforts in building a robust short text classifier are concentrated in the extraction and selection of a set of characterizing and discriminate features. The solutions investigated in this paper are an extension of those adopted in a previous work by us from which we inherit the learning model and the elicitation procedure for generating pre-classified data. The original set of features, derived from endogenous properties of short texts, is enlarged here including exogenous knowledge related to the context from which the messages originate. The role of interface design is to reconcile the differences that prevail among the software engineer's design model. The designed system meets the end user requirement with economical way at minimal cost within the affordable price by encouraging more of proposed system. Economic feasibility is concerned with comparing the development cost with the income/benefit derived from the developed system. In this we need to derive how this project will help the management to take effective decisions. As far as the learning model is concerned, we confirm in the current paper the use of neural learning which is today recognized as one of the most

efficient solutions in text classification. In particular, we base the overall 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.

- A ML based text classifier is to extract metadata from the content of the message.
- The Metadata and the data extracted from social graph and user’s profile used together by FW, to accomplish filtering rules and BL mechanism.

## V. FILTERED WALL ARCHITECTURE

The Filtered wall Architecture is Three-tier architecture with base of Online Social Networks. In that first tier is called Social Network Manager (SNM) to afford basic functionalities of OSNs, second tier is Social Network Application (SNA) provides support for external applications and final tier is Graphical User Interfaces (GUI) provide support for social network application. Social Network Manager (SNM): The Social Network Manager layer contains user’s profile and relationship graph and it provides the required functionalities of online social networks. SNM provides user information to the second tier for applying Black List (BL) mechanism and Filtering rules. **Social Network Application (SNA):** The Content Based Message Filtering (CBMF) and Short Text Classifier (STC) are implemented in second layer. CBMF contains filtering rules and black list technique to categorize the messages and Black List is to block the unwanted messages posted by the user.

**Graphical User Interface (GUI):** The messages posted by a user as input in GUI, Black Lists are used to prevent undesirable messages posted by users temporarily and before that the unwanted messages filtered by using Filtering Rules.

Existing widely used text classifiers works for the documents with large amount of data, it often fails when the text in documents is short. Short text classifiers are used to eliminate this problem. Machine learning strategy is used to categorize the text, it is aimed at eliminating neutral sentences and identifying and categorizing the non- neutral sentences in gradual manner rather than in single step process. Short text classifier will be used in hierarchical strategy. Neutral and Non neutral labels are classified as hard under first level and non-neutral short texts produces appropriateness or “gradual membership” for the conceived classes is considered as soft under second level. Machine learning and text representation are included under Short text classifier.

### 6.1 Text Representation

The most appropriate feature set and feature representation for short text messages have not yet been sufficiently investigated. We consider three types of features Bag of words (Bow), Document properties (Dp) and Contextual Features (CF). The first two types of features, already used in, are endogenous. Text representation using endogenous knowledge has a good general applicability, though in operational settings it is appropriate to use also exogenous knowledge. We introduce contextual features (CF) modeling information that characterize the environment where the user is posting. These features play important role in deterministically understanding the semantics of the messages In this section, the Filtering Rules (FRs) and Black List (BL) management development techniques illustrated in brief. In this, the Social Network represented in form of graph where each network user as each node and edges are represented as relationship between users i.e. family, friends, parents or partner etc. To consider trustworthy by user, the social network is represented as in the form of graph.

### 6.2. Filtering Rules

The Filtering rules requirement is mainly deal with three issues. The first one is, the restraint is provided by FRs on message originator second is based on social network, and the trust value is considered and based on the message creator’s relationship. By seeing all above constrains, the Creator Specification is summarized as follows: RULE 1 (creator Spec). A Creator Spec is called as Creator Specification. It inevitably specifies a firm of OSN users.

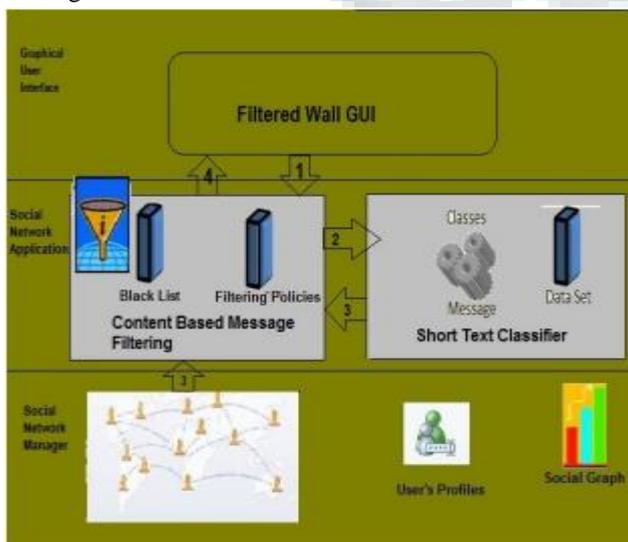


Fig 2: Filtered Wall Architecture

The message path is summarized as depicted in Fig2 as follows:

- The Filtered Wall intercepts the unwanted messages posted by user on user’s private space/wall.



1. The creator specification defined as ‘OP an av’ are represented as firm of attribute constraint where ‘an’ is attribute name for user profile, ‘OP’ is comparison operator and ‘av’ is attribute profile.
2. The depth, trust value and relationship of OSN users represented in form (minDepth, MaxTrust, rt, m) RULE 2 (Filtering Rule) A Filtering Rule is a tuple (action, author, content Spec, Creator Spec).

**6.3 Black List**

The second implementation is Black List technique to avoid malicious content from undesired users. Some Black List rules are implemented to avoid such type of information related to FRs, the specified content is filtered by owner of the user.

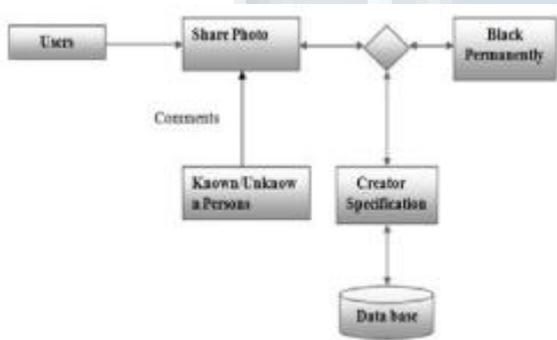


Fig 3: Blacklist System

Rule 3 (BL Rule) Black List Rule is a tuple (author, creator Spec, creator Behavior, T) Here, the rule is defined by OSN user i.e. author, creator Behavior is to Know the behavior of the message creator either to post or block message and T denotes time period the user to be banned from the wall by author.

**VII. CONCLUSION**

This presents a system to filter undesired messages from OSN walls. Moreover, the flexibility of the system in terms of filtering options is enhanced through the management. We plan to address this problem by investigating the use of online learning paradigms able to include label feedbacks from users. Additionally, we plan to enhance our system with a more sophisticated approach to decide when a user should be inserted into an OSN walls. A preliminary work in this direction has been done in the context of trust values used for OSN access control purposes. For each message, the user tells the system the decision to accept or reject the message. The collection and processing of user decisions on an adequate set of messages distributed over all the classes allows computing customized thresholds representing the user attitude in accepting or rejecting certain contents. Also concluding that the proposed work can focus network message delivered based on OSN walls automatic removal of unnecessary messages from

buffer overflow in filtered walls. The solutions investigated in this paper are an extension of those adopted in a previous works from which inherit the learning model and the elicitation procedure for generating pre-classified data.

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