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Survey on Filtering Unwanted Messages and Misbehaving Users from OSN User Walls

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ABSTRACT: Online Social Network (OSN) users are not able to control the messages posted on their private wall. The contents which are unwanted with respect to OSN users should be avoided to display. For this purpose we propose a system which will allow an OSN user to have direct control on messages posted on their private space (User Wall). This system allows users to customize the filtering rules to be applied to their walls and we exploit machine learning based soft classifier automatically labelling messages in support of content based filtering. In addition to this we proposed the system to blocked misbehaving users also we exploit Blacklist (BL) mechanism in this paper. BL is use to determine which user should be inserted in BL and decide when to retention of the user finish.

KEYWORDS: Online social network, Blacklist, Machine Learning, Filtered Wall, Filtering Rules.

I. INTRODUCTION

Online social Network are today's one of the most popular interactive medium to share, communicate and distribute an important amount of human living information .The information shared is in the form of text, audio, video, images in tremendous quantity. In today's OSN there is a very high chance of posting unwanted contents by unwanted users on private user walls. Which will harmful to the security of OSN users. Today's OSN sites provide very little support for this. So to control posting unwanted messages on the user walls we are implementing Filtering Rules (FRs) in our system. Also Blacklist (BL) will maintain in this system along with FR. The filtering rules use to give users the ability to automatically control the messages written on their private walls by filtering out unwanted messages and blacklist will allow users to put other users in blacklist and decide when to retain that user.

II. LITERATURE SURVEY

A distinction is made between two types of text filtering systems: content-based and social filtering systems. In content-based systems, filtering is done by exploiting the information extracted from the text of documents. In social filtering systems, documents are filtered based on annotations made by prior readers of the documents. With respect to this framework, our system is closer to content-based filtering systems, however we utilize other sources of information next to the text of documents. We use social features of the users to identify the ones who are more likely to post relevant content, however it is different from the social filtering systems where other users' feedbacks are used. We believe that this is a key OSN service that has not been provided so far. Indeed, OSNs provide very little support to prevent undesired messages on user walls. 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. 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 main contribution of this is the design of a system providing customizable content-based message filtering for OSNs, based on ML techniques. Our work has relationships both with the state of the art in content-based filtering, as well as with the field of policy-based personalization for OSNs and, more in general, web contents. Therefore, in what follows, we survey the literature in both these fields.

A. Content-Based Filtering

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Information filtering systems are designed to classify a stream of dynamically generated information dispatched asynchronously by an information producer and present to the user those information that are likely to satisfy his/her requirements [3]. In content-based filtering each user is assumed to operate independently. As a result, a content-based filtering system selects information items based on the correlation between the content of the items and the user preferences as opposed to a collaborative filtering system that chooses items based on the correlation between people with similar preferences [4]. While electronic mail was the original domain of early work on information filtering, subsequent papers have addressed diversified domains including newswire articles, Internet "news" articles, and broader network resources [5], [6]. Documents processed in content-based filtering are mostly textual in nature and this makes content-based filtering close to text classification. 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 [7]. More complex filtering systems include multi-label text categorization automatically labeling messages into partial thematic categories.

In [4] a detailed comparison analysis has been conducted confirming superiority of Boosting-based classifiers [10], Neural Networks [11] and Support Vector Machines over other popular methods, such as Rocchio and Naive Bayesian. However, it is worth to note that most of the work related to text filtering by ML has been applied for long-form text and the assessed performance of the text classification methods strictly depends on the nature of textual documents.

B. Policy-Based Personalization Of OSN Contents

There have been some proposals exploiting classification mechanisms for personalizing access in OSNs. For instance, in [8] a classification method has been proposed to categorize short text messages in order to avoid overwhelming users of microblogging services by raw data. The user can then view only certain types of tweets based on his/her interests. In contrast, Golbeck and Kuter [9] propose an application, called FilmTrust, that exploits OSN trust relationships and provenance information to personalize access to the website. However, such systems do not provide a filtering policy layer by which the user can exploit the result of the classification process to decide how and to which extent filtering out unwanted information. In contrast, our filtering policy language allows the setting of FRs according to a variety of criteria, that do not consider only the results of the classification process but also the relationships of the wall owner with other OSN users as well as information on the user profile. Moreover, our system is complemented by a flexible mechanism for BL management that provides a further opportunity of customization to the filtering procedure. The approach adopted by MyWOT is quite different. In particular, it supports filtering criteria which are far less flexible than the ones of Filtered Wall. Content filtering can be considered as an extension of access control, since it can be used both to protect objects from unauthorized subjects, and subjects from inappropriate objects. In the field of OSNs, the majority of access control models proposed so far enforce topology-based access control, according to which access control requirements are expressed in terms of relationships that the requester should have with the resource owner. We use a similar idea to identify the users to which a FR applies. However, our filtering policy language extends the languages proposed for access control policy specification in OSNs to cope with the extended requirements of the filtering domain. Indeed, since we are dealing with filtering of unwanted contents rather than with access control, one of the key ingredients of our system is the availability of a description for the message contents to be exploited by the filtering mechanism. In contrast, no one of the access control models previously cited exploit the content of the resources to enforce access control. Moreover, the notion of BLs and their management are not considered by any of the above-mentioned access control models. Finally, our policy language has some relationships with the policy frameworks that have been so far proposed to support the specification and enforcement of policies expressed in terms of constraints on the machine understandable resource descriptions provided by Semantic web languages. Examples of such frameworks are KAoS and REI, focusing mainly on access control, Protune , which provides support also to trust negotiation and privacy policies, and WIQA, which gives end users the ability of using filtering policies in order to denote given "quality" requirements that web resources must satisfy to be displayed to the users. However, although such frameworks are very powerful and general enough to be customized and/or extended for different application scenarios they have not been specifically conceived to address information filtering in OSNs and therefore to consider the user social graph in the policy specification process.

III. EXISTING SYSTEM

Today's Online Social Networks provides very little support to prevent unwanted messages on user's wall. For example Facebook allows users to state who is allowed to insert messages in their wall (i.e Friends, Friends of friends,

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and defined group of friends). However, no content based preferences supported and therefore it is not possible to prevent undesired messages, such as vulgar or political, no matter of the user who posts them.
The social networking services are aware of providing filtering abilities to its users is MyWOT a social networking service which gives its subscribers the ability to 1.Rate resources with respect to four criteria's: trustworthiness, vendor reliability, privacy, and child safety, 2. Specify preferences determining whether the browser should block access to a given resource or should simply return a warning message on the basis of the specified rating.
In existing system the messages are blocked by the users but user's who send that messages will not be blocked.

IV. PROPOSED SYSTEM

Here we proposed a system that can be able to filter the unwanted messages according to message contents. Once this system deployed at the side of OSN service user, this system will check every message coming to intended recipient and take immediate decision about message to be display or not. For this we should exploit the Filtering Rules (FR) to filter the messages and Blacklist (BL) mechanism to block users.

V. CONCLUSION

In this paper, we surveyed our proposed system which will categorize the messages posted on OSN user walls. Our system is based on content based message filtering system. We exploit a machine learning text categorization technique which will automatically assign a category to each message based on its contents. We exploit customizable Filtering rules (FRs) to decide which message should be display or should not be display on user walls based on OSN user requirement. We also exploit Blacklist (BL) mechanism which will block the misbehaving users, to post messages on other users private space.

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