Filter Unwanted Messages From OSN User wall

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Abstract: One fundamental issue in today's Online 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 is achieved through a flexible rule-based system, which allows users to customize the filtering criteria to be applied to their walls

Keywords: Online social networks, information filtering, short text classification, policy based personalization.

1. INTRODUCTION

Most common interactive medium to communicate is online social network. several types of information or content will be shared between the users, the type of contents are audio, video, images etc. As the Amount of content will be very vast information filtering is used . OSN provide very less amount of security in posting unwanted messages. Information filtering is used for unrelated purpose. Ability of a user to automatically control the messages written on the user wall, by filtering additional communication will be termed as information filtering [1]. We exploit Machine Learning (ML) text categorization techniques [2] 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 discriminant features. Additionally, the system gives the support for user-defined Black Lists (BLs), that is, lists of users that are temporarily prevented to post any kind of messages on a user wall. OSNs provide support to prevent unwanted 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.

2. LITERATURE REVIEW & RELATED WORK

Filtering is based on explanations of individual or group information preferences that typically represent long-term interests. Users get only the data that is extracted. Information filtering systems are intended to categorize a stream of dynamically generated information and present it to the user those information that are likely to satisfy user requirements. Feedback using previous related abstracts provided an efficient and simple way of demonstrating people's interests [4]. 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. A distinction is made between two types of text filtering systems: content-based and social filtering systems. In contentbased 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. 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. In the OSN domain, interest in access control and privacy protection is quite recent.

2.1 Content-Based Filtering

Information filtering systems are designed to classify a stream of dynamically generated information dispatched synchronously 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 [5]. In content based filtering to check the user's interest and previous activity as well as item uses by users best match is found [6]. For example OSNs such as Facebook, Orkut used content based filtering policy.

2.2 Policy-Based Personalization Of OSN Contents

There have been some proposals exploiting classification mechanisms for personalizing access in OSNs. For instance, in [7] a classification method has been proposed to categorize short text messages in order to avoid overwhelming users of micro blogging services by raw data. The user can then view only certain types of tweets based on his/her interests. In policy based filtering system users filtering ability is represented to filter wall messages according to filtering criteria of the user. Twitter is the best example for policy based filtering. Our work is also inspired by the many access control models and related policy languages and enforcement mechanisms that have been proposed so far for OSNs[8], since filtering shares several similarities with access control. Actually, content filtering can be considered as and extension of access control, since it can be

used both to protect objects from unauthorized subjects, and subjects from inappropriate objects. Goal Our goal is to design an online message filtering system that is deployed at the OSN service provider side. Once deployed, it inspects every message before rendering the message to the intended recipients and makes immediate decision on whether or not the message under inspection should be dropped.

3.PROPOSED SOLUTION

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 user walls. Machine Learning (ML) text categorization techniques (Neural Text Classifier) used to automatically assign with each short text message. 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 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. In the current paper the use of neural learning which is today recognized as one of the most efficient solutions in text classification.

A. Filtering Rules

In user walls like in everyday life, the same message may have different meanings and relevance based on who writes it. As a consequence, FRs should allow users to state constraints on message creators. Creators on which a FR applies can be selected on the basis of several different criteria; one of the most relevant is by imposing conditions on their profile's attributes. In such a way it is, for instance, possible to define rules applying only to young creators or to creators with a given religious/political view. Given the social network scenario, creators may also be identified by exploiting information on their social graph. This implies to state conditions on type, depth and trust values of the relationship(s) creators should be involved in order to apply them the specified rules.

B. Blacklist Mechanism

A further component of system is a BL mechanism to avoid messages from undesired creators, independent from their contents. Blacklists 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 user's retention in the BL is finished. To enhance flexibility, such information is given to the system through a set of rules, hereafter called BL rules. 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, by, at the same time, being able to post in other walls.

4. FILTERED WALL ARCHITECTURE

The architecture of OSN is a three-tire structure of three layers. These three yers are

- Social Network Manager(SNM)
- Social Network Application(SNA)
- Graphical User Interface(GUI)

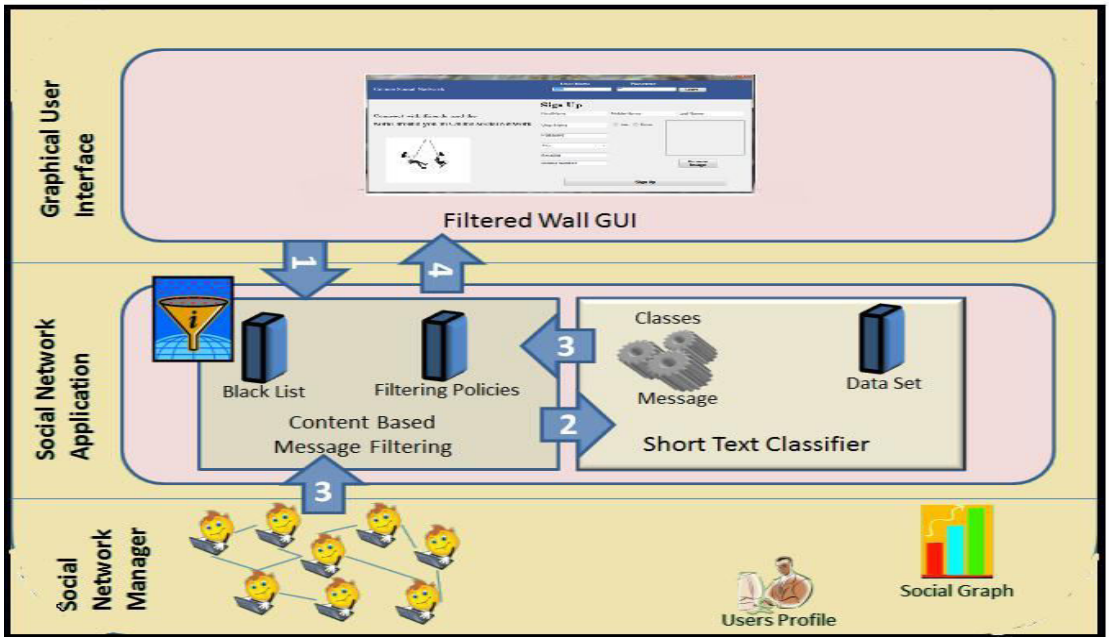

Figure 1.filtered wall architecture

In general, the architecture in support of OSN services is a three-tier structure. Additionally, some OSNs provide an additional layer allowing the support of external Social Network Applications. Finally, the supported SNAs may require an additional layer for their needed graphical user interfaces (GUIs).

A. Social Network Manager

The first layer is Social Network Manager layer which provides the necessary OSN functions such as profile and relationship administration. It also maintains all the data of the user profile. After administrating and maintaining all users data will be provided for second layer for applying Filtering Rules and Black lists.

B. Social Network Application

In second layer, Content Based Message Filtering and Short Text Classifier is composed. This is important layer for the message categorization as per CBMF filters. Blacklist is managed for the user who frequently sends bad words in message.

C. Graphical User Interface

The third layer consists of Graphical User Interface to the user who wants to post his messages as a input. Here, Filtering Rules are used to filter the unwanted messages and provide Black list for the users who are temporally banned to post messages on user's wall. The GUI consists of Filtered Wall where the user is able to see his desired messages.

1. After entering the private wall of one of users, the user tries to post a message captured by Filtered wall
2. A ML-based text classifier extracts data from the message content.
3. Filtered wall uses data given by the classifier, along with data extracted from the users profiles, to implement the filtering rules and blacklists techniques.
4. Considering the result of the previous step, message will be filtered.

5. CONCLUSION

In this paper, we have proposed a system to filter undesired messages from OSN walls. The system exploits a ML soft text classifier to impose customizable content-dependent FRS. Besides, the flexibility of the system in terms of filtering criteria is enhanced through the management of BLs. This work is the further step of a wider project. The early motivating results we have obtained on the classification procedure instigate us to continue with other work that will aim to enhance the quality of classification. In particular, future plans contemplate a extensive investigation on two interdependent tasks. The current batch learning strategy, based on the preparatory collection of the entire set of labeled data from experts, allowed an accurate experimental evaluation but needs to be developed to include new operational requirements The development of a GUI and a set of related tools make easier BL and FR specification is also we plan to investigate, since usability is a key requirement for such kind of applications.

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