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AN IMPROVED PRIVACY POLICY INFERENCE OVER THE SOCIALLY SHARED IMAGES WITH AUTOMATED ANNOTATION PROCESS

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ABSTRACT:

With the growing size of the images for users to share through social sites, privacy has become a big problem, As it can be seen from the recent wave of publicity incidents where users inadvertently share personal information. In this light Accidents, and the need of tools to help users control access to shared content is clear. Towards meeting this need, we suggest Adaptive system to predict Privacy Policy (A3P) to help users compose privacy settings for their photos. We examine the role of The social context and the content of the image, and metadata as possible indicators of the users' privacy preferences. We suggest the framework of the second level Which according to the history of the user on the site, and identifies the best pictures available to the Privacy Policy is being used It has been downloaded. Our solution depends frame images classification of the categories of the image that may be associated with similar policies, And the algorithm to predict the policy automatically generate all the images that are newly uploaded approach, also according to the users' social Features. Over time, the policy was born follow the evolution of the situation users' privacy. We offer a wide range of our results Evaluate more than 5,000 policies that demonstrate the effectiveness of our system, with accuracy to predict more than 90 percent.

Introduction

The pictures are now one of the main pillars for connecting users. Exchange occurs between the two former Group set up of people who know or social circles (e. G., In the + Google, Flickr or Picasa), and also increasingly with People outside of the users social circles, for the purposes The discovery of the social help them identify new colleagues and Learn about the interests of colleagues and social surroundings. However, linguistically rich images may reveal content sensitive About []. Look at a

picture of students 2012 graduation ceremony, for example. maybe you can be Joint inside Google+, Flickr group circle, but may Unnecessarily expose family members students BApos And other friends. Sharing photos in online content Sharing sites, therefore, may leadto quickly detect unwanted And violations of the privacy [3], [24]. Moreover, the persistence The nature of the media over the Internet makes it possible for To collect rich information collected from other users Content owner prism and the people in Published content [3], [20], [24]. And assembled Information can lead to unexpected exposure of one The social environment and lead to abuse one's personal information. Most of the sites share content that allows users to enter their Privacy Preferences. Unfortunately, recent studies have Showed that users of the struggle for the establishment and maintenance of this Privacy Policy Settings [1], [11], [22] [33]. One of the main reasons And that given the amount of shared information provided This can be a tedious process and prone to error. And therefore, Many have acknowledged the need for a policy recommendation Systems that can help users easily and properly Configure your privacy settings [7], [22], [28], [30]. However, It seems that the current proposals for automating privacy settings It is not sufficient to meet the needs of a unique privacy Images [3], [5], [41], due to the amount of information The implicit within the images, and their relationship with Internet environment where they are exposed to it. In this paper, we propose to predict adaptive Privacy Policy (A3P) system which is designed to provide users with a hassle Privacy settings free experience by automatically generating Personalized policies. A3P system handles user Images that have been downloaded, and the factors in the following criteria The impact on one's privacy settings of images.The impact of the social environment and personal characteristics. Social context for users, such as their personal information And relationships with others may provide Useful information about users' privacy preferences. For example, users who are interested in photography You may want to share photos

with other amateur Photographers. Users who have many family members Between social contacts may share with them Photos related to the events of the family. However, using Common policies on all users or across users with Details may be similar very simplistic and not satisfied Individual preferences. Users may have dramatically Different opinions, even in the same type of images. For example, a negative person who may be willing Privacy To exchange all his personal image while the more conservative Anyone who just wants to share personal pictures may With members of his family. In light of these considerations,It is important to find the balance point Between social environment and users effect Individual characteristics in order to predict policy That suit the needs of each individual. Moreover, individuals can change the overall Attitude toward the privacy with the passage of time. in order to Personal development system policy recommendation, This should be changes to the Privacy views Consider carefully.? The role of the image and metadata content. generally, Often incur similar pictures similar privacy preferences, Especially when people show up in the pictures. For example, one can download many of his images Children and determined that only the members of his family Allowed to see these pictures. You may download some Other pictures of landscapes, which he took as a hobby These images, he has been appointed for Privacy Preferences Allowing anyone to view and comment on photos. Visual content analysis may not be enough To capture users' privacy preferences. Signs and other Metadata indicates the social context of the Image, including where it was taken, and why [4], And also provide a synthetic description of images, Supplement the information obtained from Visual content analysis. Corresponding to the criteria mentioned above, A3P proposed system consists of two main building Blocks (as shown in Figure 1): Social A3P- and A3P nucleus. The A3P core focuses on the analysis of each individual user own Images and metadata, while social A3P- offers community Perspective of recommendations for the development of privacy Improve the potential for user privacy. We interaction design Flows between the two blocks to

balance The benefits of meeting personal characteristics and get The advice of the community. To assess the practical value of our approach, we have built Model system research and conduct extensive Evaluation. We collected and tested on real policies 5500 I was born more than 160 users. Our experimental results Demonstrate proficiency and high accuracy to predict Our system. And it provided for an initial discussion of core A3P In [32]. In this work, we provide a copy of the overhauled A3P, which includes the prediction of the expanded policy A3P algorithm in the nucleus (which now parameters on the basis of User groups also factor in possible) outliers, and the new A3P social unit that develops the concept of the social context To improve and expand our power to predict. We Also conducting additional experiments with a new set of data Collected more than 1,400 images and corresponding policies, We express our analysis of the experimental results for the detection of More ideas from the performance of our system.

About the System

A3P The system consists of two main components: the nucleus A3P And social A3P. General data flow is as follows. When a user holds an image, the image will be sent for the first time A3P to the nucleus. The nucleus A3P classified image and It determines whether there is a need to call the A3P and social. In most cases, it predicts A3P core policies for users Directly based on historical behavior. If one of the following The verification of real cases and will A3P nucleus protest A3Psocial: (I) does not have enough data the user has to type Of images that are uploaded to an unpredictable policies; (II) Detects A3P nucleus major changes recently held between the user Community about our privacy practices along with the user Increased social networking activities (a new addition Friends, new functions in a single glance, etc.). In the cases mentioned above, It would be useful to provide the user the latest Privacy The practice of social communities that have a similar background As a user. A3P user of social communities in social groups With similar social context and privacy preferences, Social groups and

constantly monitored. When Has been called the social A3P, it automatically determines the social Set user and sends back information about Group basic to predict policy A3P. In the end, It will display the policy predicted for the user. If the user Quite satisfied with the policy of predicted, or they can just Accept it. Otherwise, the user can choose to revisit the policy. Actual policy will be stored in the warehouse Policy A system for predicting future additions policy.

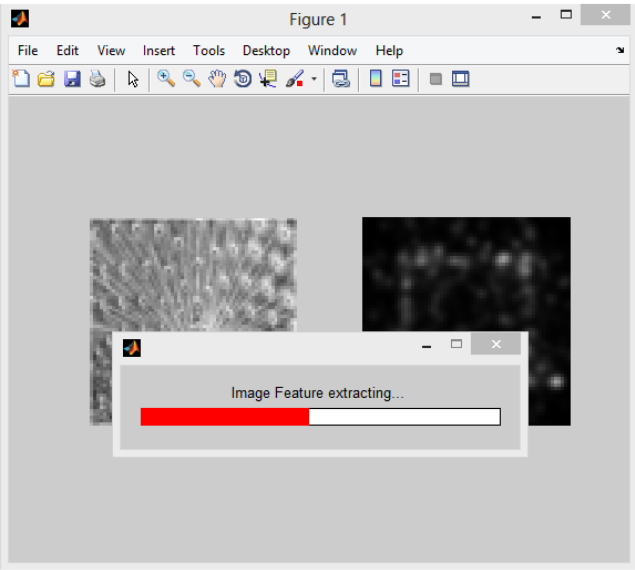

Fig.1 extracting image

A3P-CORE

There are two main components in the nucleus A3P: (i) classification image And (b) to predict adjustment policy. For each user, The first classified based on his / her pictures on the content and Metadata. Then, the privacy of each category of images policies It is analyzed to predict the policy. Adoption of a two-stage approach is more appropriate for policy The recommendation of the joint application of phase one Data mining approach to mine both the features of the image and Policies together. I remember that when a new user to download Image, the user waits for the recommended policy. The Two-stage approach allows the system to employ the first Stage to classify a new image and find the groups candidate Photos of the recommendation and subsequent policy.

Category Photos

For a group of pictures that may be associated with Similar privacy preferences, we suggest a hierarchical Images that are classified with pictures based on the classification of Its contents and then refine each category into sub-categories Based on

their own metadata. Images that do not have meta data Will be just a collection of content. Such a hierarchical Classification gives higher priority to image content and Reduces the effect of the signs were missing. Note that it is possible That are included some images in multiple categories As long as it contains the typical or meta-content features Of those categories.

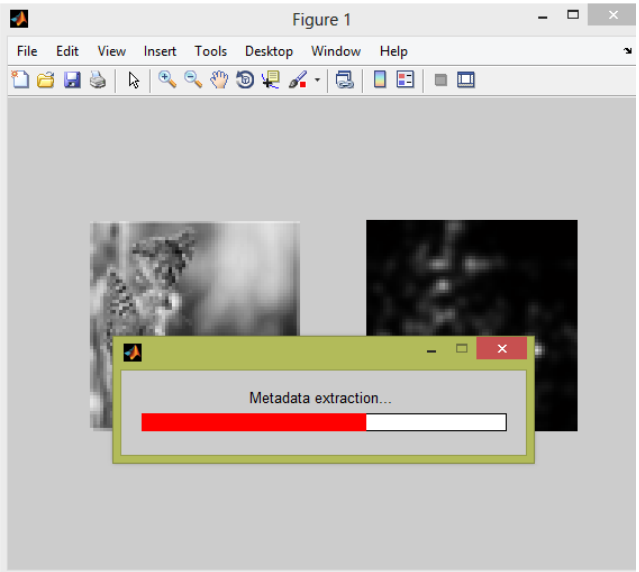

Fig.2 Metadata extraction

Classification on the basis of content

Our approach is based on the classification on the basis of content Efficiency and accurate picture of the similarity approach and after. Specifically, the classification algorithm compares our image Specific signatures on the basis of quantitative and sanitized version Of Har wavelet transform. For each image, and Wavelet transform the frequency and spatial information is encrypted Related to the color of the image and the size and shape of constant change, Texture, symmetry, etc. Then, a few transactions They are selected to form the signature on the image. Content Then determine the similarity between the images by the distance Signatures of their image.

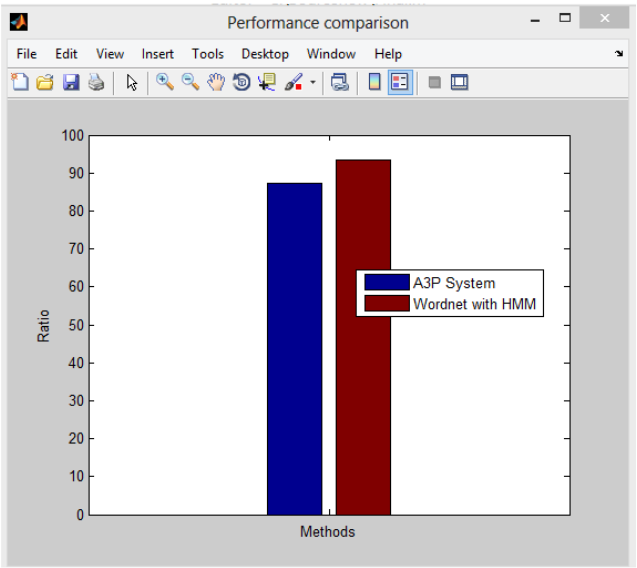

Fig.3 Performance Evaluation

Adaptive prediction policy

It provides an algorithm to predict the policy of the policy predicted Images newly uploaded to the user him / her a reference. More importantly, the policy is expected to reflect the possible Changes privacy concerns user. Forecasting Process consists of three main phases: (i) the normalization of politics. (B) mining policies; and (c) to predict policy Normalize policy is simple decomposition process To convert the user policy to a group of nuclear bases inThe data component (D) is a collection of one item.

Mining policy

We suggest mining hierarchical approach for mining policy. Our approach leverages association rule mining techniques To discover patterns in the popular policies. And is extracted Policy Within the same class of the new image for It is probably under-like images in the same category The level of privacy protection. Basic hierarchical idea Mining is to follow the natural order which identifies the user Policy. Giving the image, the user is usually for the first time decide who Can access the image, and then think about what the arrival of specific

Conclusion

We proposed to predict the privacy policy of adjustment (A3P) system that helps users automate Privacy Policy Photos uploaded settings. The system provides A3P A comprehensive framework for inference privacy preferences Based on the information available to a particular user. We also dealt with the issue effectively in cold start, take advantage of About social context. Prove our pilot study That we have A3P is a process that provides an important tool Improvements to the current approach to privacy.

A dataset with 200 images, in 4 classes of about 50 images in each class, annotated with keywords, each annotation being a text string of up to 25 keywords is created manually. The system reads images and text in the database extracts features of image and metadata. The features of the images are extracted by using SIFT descriptor and the images are annotated by Hidden Markov Model. The annotated images are

semantically retrieved based on Wordnet. After that we can select an image from one of the four image classes. The system provides the security policy for the selected image. Experimental result of automatic image annotation system compared to the existing system is shown in figure 3. The proposed system provides improved accurate generation of the privacy policy for the users rather than the existing retrieval system of framework. V. CONCLUSION The present work proposes Semantic annotated Markovian Semantic Indexing (SMSI) a semantic image retrieval is done and its performance improved by incorporating an automatic annotation system. Automatic annotation of images in database has been done by using a proposed Hidden Markov model which uses the extracted features (color and texture) where all states represent the concepts. Semantic similarity based image retrieval can be done with the use of Natural language processing tool namely WordNet where conceptual similarity between natural language terms were done. Comparative result provides better result for proposed system rather than existing retrieval system of framework.

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