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Preserving and Controlling Privacy on sharing of Photos over Social Network Site

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ABSTRACT: Sharing of photos is popularized on Online Social Networks (OSNs). In this, we attempt to address this issue and study the scenario when a user shares a photo containing individuals other than himself. To prevent possible privacy leakage of a photo, we make mechanism to enable each individual in a photo be aware of the posting activity and participate in the decision making on the photo sharing. For this, we need an efficient Question Answer Matching system. However, more demanding privacy setting may limit the number of the photos publicly available to train our system. To deal with this dilemma, our mechanism attempts to utilize users' information to design a QAM system. We show that our system is superior to photo sharing and conserving privacy.

KEYWORDS: QAM, Photo privacy, OSNs;

I. INTRODUCTION

In most photo sharing social network sites allow users to post multiple photo, because they wanted to popularized their site and user should make more and more relationships here friends. A site like facebook® there is some option to post photo but first you have to mention it or set before posting. In our system we made like that system automatically check relation with friends how close he is and then post photo to his timeline. We made our system based on Question Answer Matching(QAM) type where answer of question is matched. Our system is automatically check relation of friends, so no manual setting to be done before photo posting.

II. RELATED WORK

In [1], Xu there is photo privacy on group photo for sharing on social sites, but in that you have to specify too much option to sharing and if anyone in that photo is not friend then privacy will not considered. In [2], Squicciarini et al. propose a game theoretic scheme in which the privacy policies are collaboratively enforced over the shared data. Each user is able to define his/her privacy policy and exposure policy. Only when a photo is processed with owner's privacy policy and co-owner's exposure policy could it be posted. However, the co-owners of a co-photo cannot be determined automatically, instead, potential co-owners could only be identified by using the tagging features on the current OSNs.In [2],Besmer and Lipford study the privacy concerns on photosharing and tagging features on Facebook. A surveywas conducted in [2] to study the effectiveness of the existing countermeasure of untagging and shows thatthis countermeasure is far from satisfactory: users areworrying about offending their friends when untagging.As a result, they provide a tool to enable users torestrict others from seeing their photos when posted asa complementary strategy to protect privacy. However,this method will introduce a large number of manualtasks for end users.

III. LITERATURE SURVEY

1) Using face annotation for effective management of personal photos in online social networks (OSNs) is currently of considerable practical interest. In this paper, we propose a novel collaborative face recognition (FR) framework, improving the accuracy of face annotation by effectively making use of multiple FR engines available in an OSN. Our collaborative FR framework consists of two major parts: selection of FR engines and merging (or fusion) of multiple FR results. The selection of FR engines aims at determining a set of personalized FR engines that are suitable for recognizing query face images belonging to a particular member of the OSN. For this purpose, we exploit both social network context in an OSN and social context in personal photo collections. In addition, to take advantage of the

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availability of multiple FR results retrieved from the selected FR engines, we devise two effective solutions for merging FR results, adopting traditional techniques for combining multiple classifier results. Experiments were conducted using 547 991 personal photos collected from an existing OSN.

2) There are three key contributions. The first is the introduction of a new image representation called the “Integral Image” which allows the features used by our detector to be computed very quickly. The second is a simple and efficient classifier which is built using the AdaBoost learning algorithm (Freund and Schapire, 1995) to select a small number of critical visual features from a very large set of potential features. The third contribution is a method for combining classifiers in a “cascade” which allows background regions of the image to be quickly discarded while spending more computation on promising face-like regions. A set of experiments in the domain of face detection is presented. The system yields face detection performance comparable to the best previous systems (Sung and Poggio, 1998; Rowley et al., 1998; Schneiderman and Kanade, 2000; Roth et al., 2000). Implemented on a conventional desktop, face detection proceeds at 15 frames per second.

3) Personal photographs are being captured in digital form at an accelerating rate, and our computational tools for searching, browsing, and sharing these photos are struggling to keep pace. One promising approach is automatic face recognition, which would allow photos to be organized by the identities of the individuals they contain. However, achieving accurate recognition at the scale of the Web requires discriminating among hundreds of millions of individuals and would seem to be a daunting task. This paper argues that social network context may be the key for large-scale face recognition to succeed. Many personal photographs are shared on the Web through online social network sites, and we can leverage the resources and structure of such social networks to improve face recognition rates on the images shared. Drawing upon real photo collections from volunteers who are members of a popular online social network, we asses the availability of resources to improve face recognition and discuss techniques for applying these resources.

4) Social Networking is one of the major technological phenomena of the Web 2.0, with hundreds of millions of people participating. Social networks enable a form of self-expression for users, and help them to socialize and share content with other users. In spite of the fact that content sharing represents one of the prominent features of existing Social Network sites, Social Networks yet do not support any mechanism for collaborative management of privacy settings for shared content. In this paper, we model the problem of collaborative enforcement of privacy policies on shared data by using game theory. In particular, we propose a solution that offers automated ways to share images based on an extended notion of content ownership. Building upon the Clarke-Tax mechanism, we describe a simple mechanism that promotes truthfulness, and that rewards users who promote co-ownership. We integrate our design with inference techniques that free the users from the burden of manually selecting privacy preferences for each picture. To the best of our knowledge this is the first time such a protection mechanism for Social Networking has been proposed. In the paper, we also show a proof-of-concept application, which we implemented in the context of Facebook, one of today’s most popular social networks. We show that supporting these type of solutions is not also feasible, but can be implemented through a minimal increase in overhead to end-users.

5) The friendship" relation, a social relation among individuals, is one of the primary relations modeled in some of the world's largest online social networking sites, such as Facebook". On the other hand, the co-occurrence" relation, as a relation among faces appearing in pictures, is one that is easily detectable using modern face detection techniques. These two relations, though appearing in different realms (social vs. visual sensory), have a strong correlation: faces that co-occur in photos often belong to individuals that are friends. Using real-world data gathered from Facebook", which were gathered as part of the Face Bots" project, the world's first physical face-recognizing and conversing robot that can utilize and publish information on Facebook", we present here methods as well as results for utilizing this correlation in both directions. Both algorithms for utilizing knowledge of the social context for faster and better face recognition are given, as well as algorithms for estimating the friendship network of a number of individuals given photos containing their faces. The results are quite encouraging: in the primary example, doubling of the recognition accuracy as well as a six-fold improvement in speed is demonstrated. Various improvements, interesting statistics, as well as an empirical investigation leading to predictions of scalability to much bigger data sets are discussed.

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6) Photo tagging is a popular feature of many social network sites that allows users to annotate uploaded images with those who are in them, explicitly linking the photo to each person's profile. In this paper, we examine privacy concerns and mechanisms surrounding these tagged images. Using a focus group, we explored the needs and concerns of users, resulting in a set of design considerations for tagged photo privacy. We then designed a privacy enhancing mechanism based on our findings, and validated it using a mixed methods approach. Our results identify the social tensions that tagging generates, and the needs of privacy tools to address the social implications of photo privacy management.

IV. SYSTEM

In this section we give overview of system. In system we use QAM model to match friends liking and setting their relations. We studied for days and invent this system for building relation between them. We provide users a set of question and users have to submit their answers. When any user which is friend of other user posting photo then answer of those question will be matched and photo will share on his timeline.We also provide users to select which questions answer more is like to share photo. Answer matching number is depend on users who will set it on his choice and demand of privacy.

Algorithm : For matching answer of question

INITIALLY ,

$U_1 = X_I$ AND $U_{2} = X_I$,

IF $X_I(U_1) = X_I(U_2) \geq N_I$

Here, U1 and U2 are two users and x is the answer of question. And N is total number of answer which should be matched for photo posting. In this system user can manually specify how much answer should be matched for photo sharing.

V. IMPLEMENTATION

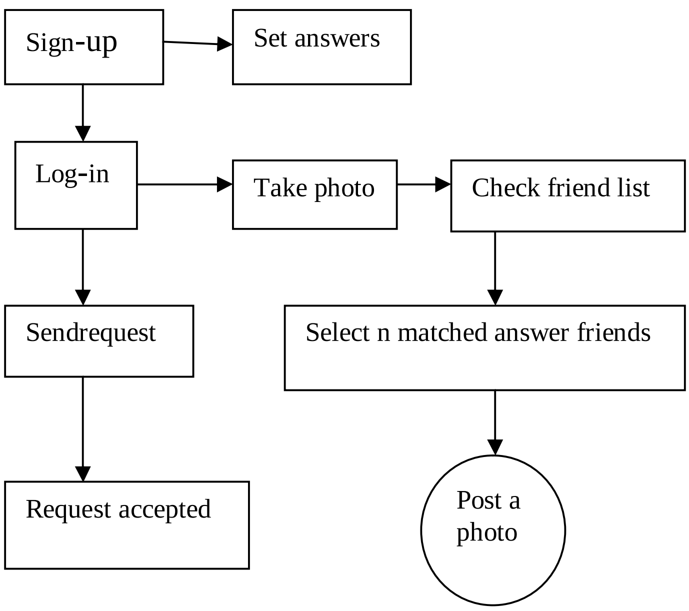

Fig. Architectural model of System

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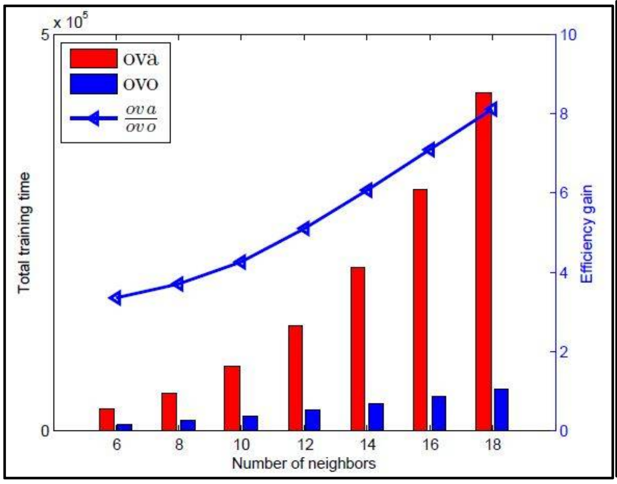
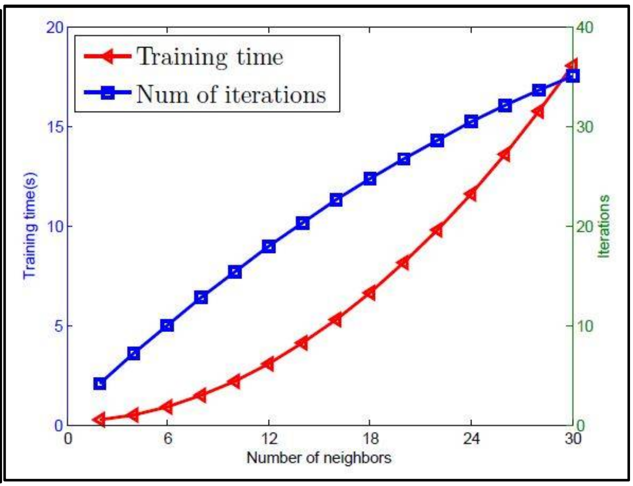
VI. RESULTS





At this stage, a large number of users are absent forus to carry out the network-wide evaluation. We simulate a real-life social network with the small-worldnetwork[24]. The simulations are conducted on a desktopwith Intel i3 550 3.4 GHz and 4.0 GB memory. Weuse the database of "Face Recognition Data, University of Essex, UK" to assign training set for each simulatedusers. The database contains photos for 395 individualsand 20 images per individual with varying poses andfacial expressions. Users are assigned with photos fromthe same individual randomly.In a small world network, there are three input parameters:the total number of vertex N, the averagenode degree _D and rewire probability p. In the rest ofthis section, we use _D and the number of neighborsinterchangeably to denote the average number of usersin one's neighborhood. To construct a small-world network,first we arrange the vertices and connect them ina ring. Then we connect every vertex with its _D nearestneighbors. Finally, for each vertex, with probability p, itsexisting edge is rewired with another randomly selectedvertex. It is shown in [14] that the rewire probabilityis highly related to the geodesic distance (the averageshortest distance between any two vertices). We wantto show that in a small-world network, there exist alot of complete subgraphs, which greatly reduces thesetup time by reusing the existing classifiers. Due toresource limitations, we simulate on a network with 3000vertices. The the computation cost is measured by totalcomputation time.Fig.5 and Fig.7 plot our simulation results in a networkof 3000 nodes with a fixed rewire probability of 0.3 anda varying _D from 6 to 18. Specifically, as in Fig.5, theone-against-all (OVA) approach and our proposed oneagainst-one (OVO) approach are compared in terms oftotal computation cost. We can see that the computationcost of the proposed OVO approach is much lowerand the efficiency gain is increasing with number ofneighbors. In the previous section, we argued that thisphenomenon is caused by two reasons: first, the averagenumber of iterations to converge in our OVO approachshould be much smaller; second, the classifiers could bereused with the existence of complete subgraphs.

VII. CONCLUSION

Social networking is a very popular nowadays. Photo sharing is one of the most popular features inonline social networks such as Facebook. Sharing of photos is easy task and approximately everyone is on social network sites. For this we developed site which share photo with some privacy and only visible to close friends and who are frequent contact with them. Other site enables to share photo and that photo will be publically shared. To overcome this and less manual input to privacy. Unfortunately,careless photo posting may reveal privacy of individualsin a posted photo. To curb the privacy leakage, weproposed to enable individuals potentially in a phototo give the permissions before posting a co-photo. Wedesigned a privacy-preserving FR system to identifyindividuals in a co-photo. The proposed system is featuredwith low computation cost and confidentiality ofthe training set. Theoretical analysis and experimentswere conducted to show effectiveness and efficiencyof the proposed scheme. We expect that our proposedscheme be very useful in protecting users' privacy inphoto/image sharing over online social networks. However,there always exist

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trade-off between privacy andutility. For example, in our current Android application,the co-photo could only be post with permission of allthe co-owners. Latency introduced in this process willgreatly impact user experience of OSNs. Our future workcould be how to move the proposed training schemes topersonal clouds like Dropbox and/or iCloud.

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