

A Survey on Multiparty Access Control Mechanism of Online Social Networks

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Abstract— Online social networking sites like Facebook, Twitter, Myspace, Orkut, YouTube, Linked-In and Flickr are top most popular sites on the Internet. Users of these sites form an online social network, which provides a powerful means of sharing of information or contents, organizing of data, and finding content and contacts of friends. The popularity of these online social networking sites provides an opportunity to study the characteristics of online social network graphs at large scale. Understanding these graphs is important; because it provides information to improve on-going systems and it also help to design new applications for online social network. This paper shows a large-scale measurement study and analysis of the structure of multiple online social networks which are present in the internet. The data gathered from most popular online social Networks like Facebook, Twitter, MySpace, Linked-In and YouTube. We believe that this is the first study to examine multiple online social networks at scale.

Keywords—analysis, social network, access control, Security methods, privacy.

I. INTRODUCTION

Online social networks provides connections between people based on shared interests, values, membership in particular groups i.e., friends, professional colleagues, etc. They make it easier for people to find and communicate with individuals who are in their networks using the Web as the interface. There are several different online social networks, but for our purposes, we'll focus on the five that tend to be used the most by persons or users—Facebook, twitter, My space, YouTube and Linked-IN. Each of these networks has its own unique style, functionality and patterns of usage. You will also find that different people are active in these different networks.

Facebook was originally developed for college students to connect, so it has a more informal, social air than you find on LinkedIn. Facebook combines the personal and the professional. Members can play games, join groups, share photos, and send each other virtual “gifts.” This is the network where you're most likely to see both pictures of someone's weekend activities, as well as a link to their online portfolio or professional website.

II. FACEBOOK

Facebook was designed for college students and its primary users are still students. The basic no-frills profile in Facebook includes the following:

- A place for a profile picture
- Contact information and "About You" space

- The Wall-- a place where friends can publicly post comments for you (a digital bulletin board)
- Status update-- where you can tell your friends how you are or what you are doing
- News Feed-- regularly updated information about your friends-- groups they've joined, applications or friends they have added, changes to their profiles
- A space for uploading photos and videos

But Facebook, like many social software sites, is customizable and there is no end to the number of applications you can add to your Facebook account. Applications are additional tools and features some are created by Facebook, but many more have been created by third party developers. Since its foundation, Facebook keeps improving the mechanisms for protecting privacy and managing content sharing. Now every user has the opportunity to group his connections into groups and to define which profile sections can be viewed by specific groups and which content to be publically shared.

III. LINKED-IN

LinkedIn is primarily a professional network, designed to facilitate linkages between people who want to connect for work-related purposes. Because LinkedIn is designed for professional networking, there's a greater emphasis on building a reputation and connecting to employment and business opportunities. LinkedIn Questions and Answers is a way for people to ask questions and receive expert advice. Answers can be rated and people who do this well can improve their LinkedIn reputation. There are also employment listings and an ability to receive recommendations from your connections that then become part of your profile. You can also create and join groups. Learning how to use LinkedIn is no more difficult than learning how to use any other social networking site – with a few caveats. Since LinkedIn is designed for professionals, a business like mentality is wise to keep in mind when working on a profile, adding updates, seeking introductions to new contacts and so on. Rather than offer cutesy games and tons of spam, those who learn how to use LinkedIn will find this particular site is geared specifically to professionals.

The site gains a new member almost every second around the clock and boasts members from just about every industry and country imaginable. Signing up for and using LinkedIn is completely free to users if they so choose. The

site does have some advertising, but it's not as invasive as other networking sites out there. All you need to get going and start learning how to use LinkedIn is to create a LinkedIn login to sign up for a free account. You can also upgrade to a paid LinkedIn membership. If you decide to do that, you'll be able to a few things you can't otherwise do with a free membership, including:

- Search profiles of LinkedIn's 65 million members faster
- Directly message people without receiving an introduction (generally from another member that you already know)
- Better organize profiles

Once you sign up for a LinkedIn account, either free or paid, you can create your own professional profile. Remember, since this is a more serious-minded website, it's important that information in your profile represents your business or working side. LinkedIn is not the place to share photos.

IV. TWITTER

Twitter is "a real-time information network that connects you to the latest stories, ideas, opinions and news about what you find interesting. Individuals, companies, organizations, schools, clubs and other groups can start a Twitter account to promote their events, news and to engage their personal network. Twitter isn't just for sports stars and celebrities; many professionals in economic development consider Twitter a valuable tool to be used on a daily basis. From professors to politicians and businesses to government agencies, Twitter is for everyone. The only difference is how you use it.

Glossary of Twitter terms

Tweet: The word "tweet" can be used as a verb or a noun. As a noun, a tweet is a 140-character message that you send to your Twitter followers. It can include links, hashtags or a photo. As a verb, tweet means the action of send a message on Twitter. You can use the word similar to other verbs: "tweeting" and "tweeted" are commonly used conjugations of the verb.

Follow: Following someone on Twitter means you are subscribing to their tweets, or updates from Twitter. You become a "follower" when you follow someone on Twitter. Your account will accumulate followers as well.

Twitter Feed: Your Twitter feed is a real-time home page that displays a feed of the most current tweets sent by the Twitter accounts you follow.

Reply: Twitter is for talking; if someone says something on Twitter and you want to reply, simply move your mouse over "reply," click, and type your message. For example, if you are an expert on broadband and you notice the tweet below, you can reply and let @MSU_REI[External Link] know why you think broadband is important (or anything else that is on your mind).

Mention: This is similar to a "reply", however you begin by composing a tweet and type the "@" sign followed by the username (without a space) of whoever you would like to direct your tweet at (for example, if you wanted to mention REI, include "@MSU_REI" in the message). Put the mention at the beginning of a message if you are

initiating a conversation. Mentions show up as links in Twitter, so that people reading your message can click on them to go to the Twitter account that you are referring to. You can think of it as a way to cite a source, include specific people or organizations in a conversation, or just to provide a convenient way for your followers to learn more about what you're talking about. Note that conversations are not private (regardless of whether you start them with a mention or not), and can always be seen by anyone on the Internet.

Retweet: See a tweet you really like? Want to share it with your followers? Simply move your mouse over the tweet and click "Retweet." Your followers will then see the tweet in their newsfeed and can access the article or video you thought was interesting/relevant. This is the Twitter equivalent of forwarding an email.

Hashtag: A hashtag, typed as "#" in a tweet and immediately followed by a word or phrase (without spaces), is used to mark keywords or subjects of importance. For example, #innovation and #Michigan are some of MSU REI's most used hashtags. Hashtags are used in the "search" function in Twitter to see the real-time conversation being had about a certain topic. If you wanted to see what people were saying about last night's MSU U-M football game, for example, you could type #MSU, #UM or #football. Hashtags show up as links in Twitter messages, and clicking them will show any recent Tweet (from anyone in the world) that included the same hashtag.

#FF: "#FF" stands for "Follow Friday" and is a nice way to give some of your favourite Twitter accounts a shout-out for the work they have been doing in the community or for other achievements on any given Friday. @MSU_REI gives #FFs to all kinds of followers including other economic development organizations, higher education institutions, students, innovators and community members. Follow Friday is a way to recognize your favourite Twitter accounts and to suggest them to your own followers.

#DM: "#DM" stands for "Direct Message," and refers to the private messaging feature available on Twitter. If you see "#DM us" in a tweet, it usually means the organization who sent it is looking for information that you can opt to send them privately as opposed to in a public tweet.

Twitter can help you:

- Express your opinion or share your work
- Access real-time conversations and news that is important to you
- Access others' opinions
- Conduct or participate in informal polling
- Promote your online presence
- Connect you to thought leaders in your field or industry
- Facilitate project collaboration via quick, easy communication

V. YOUTUBE

YouTube is a video Social Networking site and the 2nd most popular search site on the Internet after Google, who owns YouTube. YouTube video watching is a significant activity on the Internet, with over 1 billion visits to YouTube daily and over 100 million videos watched daily.

And it's easy for anyone who sees your video to rate it and share it with his Social Network.

YouTube's theme is "Broadcast Yourself," and as such encourages everyone to make and broadcast videos on everything imaginable. YouTube is owned and operated by Google, and leverages the search power of Google. All YouTube videos are indexed by Google's search and will appear in Google's search results when you select Video in the search options on Google. Using YouTube is a great way to get listed in Google's search results since Google gives YouTube videos priority in their search results. YouTube videos can be viewed by anyone with access to the Web site. No user account or log-in is needed to search for or watch videos. Setting up a user account, on the other hand, allows you to upload videos, and also lets you customize your viewing with YouTube by subscribing to "channels" and giving feedback ratings on videos.

When you set up your own YouTube user account, many of the familiar functions of Social Networking are offered as options, such as sending a YouTube video link to a friend or contact, commenting on a video, and rating a video. You can also link to a YouTube video from your blog and include it in a post. Videos on YouTube can be short and simple. For your marketing, decide on a goal for your YouTube activity. Some common themes include customer support, educational, product instructions, customer interviews, employee interviews, event videos, and professional produced videos.

Your YouTube videos need to have tags and descriptions associated with them for search in YouTube, so use your keywords and be sure to include them when you upload your video. Google's search bots cannot index the media, only the text associated with the media, so adding tags is critical to your video being indexed. Just like any Social Media, creating an account and only posting once (one Video) won't have a great impact. Creating a series of videos, however, will result in increased search optimization and followers of your YouTube channel. Find a way to implement regular video production into your marketing effort to build an audience on YouTube and increase your ranking.

VI. ACCESS CONTROL IN FACEBOOK

Profile and Profile information of Facebook allows each user to construct a representation of herself in the form of a online social user profile. A profile displays such profile items as personal information (e.g., favourite books), multimedia contents (e.g., pictures), activity logs (e.g., status), or other user-authored contents (e.g., blog-like postings). Facebook users may permit one another access to the online users profile items they own. Global Name Search. The first means to reach a search listing is to conduct a global name search. A successful search would produce for the accessing user the search listing of the target user. An online social user may specify a search policy to allow only a subset of online social users to be able to reach her search listing through a global name search.

Social Graph Traversal A second means to reach a search listing is by traversing the social graph. Facebook

allows users to create their relationships with one another through the construction of friend lists which are present on the online social network. Every user may list a set of other online social users as her friends. As friendship is an irreflexive, symmetric binary relation, it induces a simple graph known as the social graph, in which users are nodes and relationships are edges. An online social user may traverse this graph by examining the friend lists of other online social users. More specifically, the friend list of a online social user is essentially the set of search listings of her online social friends. A user may restrict traversal by specifying a traversal policy, which specifies the set of users who are allowed to examine her friend list after her search listing is reached.

Profile Access Once the search listing of a profile owner is reached, the accessing user may elect to access the profile, thereby initiating Stage II of authorization. Whether the profile of user as a whole can be accessed is dictated by another online social user-specified policy, the details of which we omit. Not every accessing online social user sees the same profile items when a profile is displayed.

The owner may assign an access policy to each profile item, dictating who can see that profile item when the profile is accessed. This is the means through which an online social user may project different representations of her to different groups of users.

VII. CONCLUSIONS

In this review paper we have seen the information about different social networking sites. And the terms regarding that particular social networking site. We have also seen the access control in facebook.

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REFERENCES

- [1] Jason Crampton and Hemanth Khambhammettu. Delegation in role-based access control. *International Journal of Information Security*, 7(2):123–136, April 2008.
- [2] Jack B. Dennis and Earl C. Van Horn. Programming semantics for multi programmed computations. *Communications of the ACM*, 9(3):143–155, March 1966.
- [3] David F. Ferraiolo, Ravi Sandhu, Serban Gavrila, Richard Kuhn, and Ramaswamy Chandramouli. Proposed NIST standard for role-based access control. *ACM Transactions on Information and System Security*, 4(3):224–274, August 2001.
- [4] Michael A. Harrison, Walter L. Ruzzo, and Jeffrey D. Ullman. Protection in operating systems. *Communications of the ACM*, 19(8):461–471, August 1976.
- [5] Bader Ali, Wilfred Villegas, and Muthucumaru Maheswaran. A trust based approach for protecting user data in social networks. In *Proceedings of the 2007 Conference of the Center for Advanced Studies in Collaborative Research (CASCON'07)*, pages 288–293, Richmond Hill, Ontario, Canada, October 2007.

- [6] Ezedin S. Barka and Ravi S. Sandhu. Framework for role-based delegation models. In Proceedings of the 16th Annual Computer Security Applications Conference (ACSAC'00), New Orleans, Louisiana, USA, December 2000.
- [7] Mohd Anwar. Identity and reputation management for online learners. pages 177–187, Montreal, Canada, June 2008.
- [8] Barbara Carminati and Elena Ferrari. Privacy-aware collaborative access control in web-based social networks. In Proceedings of the 22nd Annual IFIP WG 11.3 Working Conference on Data and Applications Security (DAS'08), volume 5094 of LNCS, pages 81–96, London, UK, July 2008. Springer.
- [9] Y.-Y. Ahn, S. Han, H. Kwak, S. Moon, and H. Jeong. Analysis of Topological Characteristics of Huge Online Social Networking Services. In Proceedings of the 16th international conference on World Wide Web (WWW'07), Banff, Canada, May 2007.
- [10] L. A. N. Amaral, A. Scala, M. Barthélemy, and H. E. Stanley. Classes of small-world networks. Proceedings of the National Academy of Sciences (PNAS), 97:11149–11152, 2000.
- [11] L. Backstrom, D. Huttenlocher, J. Kleinberg, and X. Lan. Group Formation in Large Social Networks: Membership, Growth, and Evolution. In Proceedings of the 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'06), Philadelphia, PA, Aug 2006.
- [12] L. A. Adamic. The Small World Web. In Proceedings of the Third European Conference on Research and Advanced Technology for Digital Libraries (ECDL'99), Paris, France, Sep 1999.