
Why Fake Profiles: A study of Anomalous users in different categories of Online Social Networks

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Abstract:

Online Social Networks (OSNs) provides an excellent platform to their users to interact, collaborate and share content on the web. These OSNs can be classified into different categories based on the context of the functionalities they provide to its members such as applications designed to build and maintain social connections, applications that focus on facilitating the sharing of media or the application forums that allow people to share their knowledge, news, and ideas. Despite the fact that these sites have made the social life of the people better, there are several issues with using them and proliferation of fake accounts is one of them. There are a number of wrong reasons which appeal the hackers to use forged identities to connect to benign users and perform adversarial, unlawful, misleading, malicious, or discriminatory operations. However, the reasons significantly depend on the type of the social network being targeted.

In this paper, we first discuss the different categories of the online social networks with their respective benefits they provide to their users. Then, the paper provides the various reasons which motivate the attacker to create fake profiles on a particular type of network. Furthermore, we also discuss the way forged identities destabilize a network and exploit its facilities.

Keywords: *Online Social Networks, Fake profiles, Social Network threats, Privacy and security.*

INTRODUCTION

Online Social Networks (OSNs) refer to the web applications which are primarily designed to facilitate interaction, collaboration and share content among its users. These applications provide a platform for its users to connect with the users of similar interests, domains, experiences and so on and assist them with an excellent medium to share and consume information across the network. OSNs can be of different types depending upon the purpose they have been designed to serve. There are social networks which help people in building online social connections and facilitate them in keeping in touch with their friends and family members, e.g. Twitter, Facebook, MySpace, etc. Facebook is the topmost online social network which provides a platform to users for connecting and sharing information with their connections. Twitter offers its members to broadcast their thoughts, opinions, suggestions and get updates from other connected members. Some social networking sites are specifically designed to provide an easy and convenient way to share videos and photos such as YouTube and Flickr. Furthermore, there are online networking applications which are primarily designed to promote professional growth of its users. LinkedIn is the largest online professional network that provides a powerful option to connect to relevant people in their career domain. A discussion forum is also one of the types of social media e.g. Quora, which allows a user to ask and answer questions of a topic to the people and share their knowledge. Online dating applications are another type of OSNs which make it easy for the users in connecting and hooking up with the strangers.

Although social networking sites have made the lives of the people better but nevertheless there are several unavoidable and serious issues with associated with them such as misuse of personal and professional information, social engineering, online bullying, online impersonation etc. The existence of fake profiles on the network is one of the major concerns for both the OSN service providers and its users. A fake profile represents the identity (profile) of persons who claim to be someone they are not. According to the Facebook, if one is using a Facebook account other than his principle account is fake. Fake accounts are usually created to perform various unlawful, misleading, malicious, or discriminatory activities on the network, posing threat

to the network as well its users. The motive behind the fake profiles generally varies with the type of network for which they have been created. A growing number of hackers are creating forged identities on network like Facebook and Twitter to access the personal information of users, to endorse a particular brand or a person, to defame a user, etc. Adversaries may target professional sites like LinkedIn with the aim to track the activity of the members or to gain the trust of business professionals. Attackers often target dating websites to take the advantage of people who looking for companions for monetary purpose, gifts, or personal information.

The paper primarily aims to investigate the reasons which compel a user to create fake identities on the social networks. However, the purpose for creating forged identities heavily depends on the kind of targeted online social network. Thus, the paper categorizes the different genre of social networking sites and lists the reasons for the existence of fake accounts on their networks and how they subvert and exploit the network facilities. The rest of the article is structured as follows. Section 2 describes different categories of online social networks. We have categorized them into five categories based on their functions and the type of users on them. A variety of reasons for establishing fake profiles on different OSN is briefly described in section 2.

Online Social Network (OSN) Categories

Based on the functionalities and facilities provided by OSNs, we have categorized them into five main categories viz Pure OSNs, Media sharing OSNs, Professional OSNs, Discussions forums and Blogs and Dating OSNs. Each of the categories has been explained separately with their unique characteristics in the following subsections.

A) Pure OSNs

As the name given, pure OSNs or simply POSNs are the online social networking websites which play a vital role in people's daily social activities including creating new friends, sharing information with existing friends, discussing events, joining new communities, reading news, etc. Besides that the POSNs facilitate their members with functionalities like audio and video calling, chatting, updating your current location as a post, etc. We have briefly described some of the commonly known POSNs in the following sub sections.

1. Facebook

Facebook is a pure online social networking website that allows its members to get connected with their family and friends on the internet and share their thoughts, opinions, status updates, photos, videos and links to the websites that they found interesting, important, informative entertaining, amusing, etc. Facebook is considered as the largest social networking site in the world and one of the most widely used. It was the first social networking site that crosses the landmark of 1 billion user accounts [1]. Facebook was launched on February 4, 2004, and currently, it has more than 1.50 billion monthly active users.

Apart from building a social network with friends and relatives, the users can also access several Facebook apps (paid or free) in order to promote the business, reach to potential customers or sell products online. Furthermore, different kinds of people use Facebook for different purposes. For example, sociologists use them to analyze the human behavior and politicians use them to empower their political campaigns, game lovers especially youth participate in multiplayer games or play single alone games available on Facebook website general public use them for fun, entertainment, reading news and share information, upload media and tag their friends, etc. [2][16] [17] [18].

The above paragraph clearly highlights that Facebook is primarily a fun and modern way to play, communicate and share information among friends. Anyone can easily avail these facilities by simply having a verified email address or phone number.

2. Twitter

Twitter is an online social networking site which allows its users post short text (up to 140 number of characters) messages called tweets on their twitter accounts to convey the message to the world. Unlike Facebook, it does not have the option to send friend requests. Here, you can follow a person or any organization you wish to and their tweets will appear on your timeline. Twitter has also covered a massive

number of people from different regions of the world. There are more than 300 million monthly active users on Twitter [1].

A twitter user can have millions of followers based on their popularity. Twitter register members can post tweets, retweet some friends' tweets but those who are unregistered can only read them. Like Facebook, Twitter users can also send the private messages which can be seen only by the person whom they sent. One interesting thing about Twitter is that it is one-to-many communications medium (broadcasting), as opposed to Facebook, which is more of a conversational communications medium, one-to-one communications medium (for example texting).

With the social networking and mounting enthusiasm for online shopping, Twitter also enables its users to promote their businesses and brands even shop through the tweets directly. Nowadays, large business organizations use Twitter as a tool extract gain the business value [3].

3. Sina Weibo

Sina Weibo often simply called 'Weibo', is China's one of the biggest social media platforms. 'Weibo' literally means 'micro-blog.' This is a most popular and commonly used micro-blogging social networking site in China that contains the features of both Twitter and Facebook [4]. Sina Weibo has more than 220 million monthly active users and is gaining the universal popularity.

As it has been clear now that POSNs focus solely on the public social activities, the OSN service providers are looking for advanced and easy ways to attract more public towards them. For example, Facebook enables its users to react on a post in six different ways (like, angry, love, wow, haha, sad) and also allows to have live chat with your friends in a side-by-side conversation. Live chat basically allows the user to have a video conversation with friends. It is a completely different way to capture social interaction. Similarly, Twitter and Sina Weibo sites are introducing new functionalities and futures to gain user base.

B) Media Sharing OSNs

Media sharing OSNs are those online social networking websites which are more concerned with photos and videos rather than texts. Presently, there are several media sharing websites available which engage users by simply uploading their activities in the form of pictures or sharing videos. In this section, we will explain some of mostly used and popular ones.

1. Instagram

Instagram is a unique social networking podium that was completely focused and based on sharing photos and videos with user followers. This social networking platform enables its users to capture the photos using phone's camera or any other camera and apply a number of filters on it before publishing it. Instagram also allows apply multiple filters to the already captured photos and easily post them to other POSNs, such as Facebook and Twitter. Because of its unique features, it has engaged a huge number of people. It has more than 400 million monthly active users.

2. Youtube

YouTube is the world's top most video-sharing social networking website presently owned and operated by tech giant Google that enables users to upload and share videos, view them, comment on them, share them and like them [5]. This social network is accessible throughout the world and allows the registered to create their own YouTube channels where they can upload all their personally recorded videos in order to gain popularity among friends and public and can even earn money. Scientists and academicians upload their experiment and lecture series to help the new researchers and students respectively.

3. Snapchat

Unlike YouTube, Snapchat is most popular photo-sharing social networking website that enables users to chat with friends by using pictures. It also allows reading news and explores live stories around the world. Snapchat provides a unique facility that once the user has uploaded the photo it will automatically disappear from the website after few seconds in order to ensure the privacy to the users.

A photo is worth than hundreds of words¹, and it has been seen in every online social network that more content is in the form of pictures. This is why people often seen uploading photos more catchy and cool than writing texts. A number of photo and video sharing social networks have been developed from last one decade and people are highly participating to these sites. The rapid increase in the use of smartphones is continuously pushing the public towards these sites. These days users can easily take quality pictures with their phones, and by the help of various apps they can also edit and share these images on media sharing websites as well. There are several other popular media sharing websites with different functionalities like Flickr is a highly popular photo-sharing online social networking website which serves as a platform to upload high-quality pictures, especially by professional photographers or people who love photography, Snapfish [6] is a photo sharing social networking site that enables its members to upload any number photos unlimited storage space. Now the user does not have to worry about storage space and can store a vast collection of high-quality pictures.

C) Professional Social Networks

A professional network is a type of OSN focused solely on business-based interactions and relationships rather than personal, non-business, social interactions

No doubt, we have a huge number of OSNs available for building our social networks but when it comes to networking professionally online, the different category of sites called professional OSNs are needed. Professional networks are mostly used by business personals, researchers, academicians, etc. in order to establish and maintain contacts with other similar professionals and a way to either find opportunities or enhance their career [7]. We have briefly described some of the commonly known professional OSNs as under

1. LinkedIn

LinkedIn is a professional OSN that allows its members to introduce to other like minded professionals collaborate with them. It is mainly used by employers for posting jobs and job seekers for posting their resume. LinkedIn is easy and one of the most popular professional OSNs available in more than 20 languages. It is used by all types of professionals and business individuals to create professional networks, search and recruit ideal candidates, locate potential customers, etc.[8]. It has more than 350 million members and more than 90 million monthly active users.

2. Researchgate

ResearchGate is a social networking website especially designed for scientists and researchers to share their current work, papers, ask and answer questions, and find research funding agencies and collaborators for the research work. It is considered as the largest academic social network in terms of a number of active users[9].

Besides the professional networking ResearchGate also enables its users to create and join research groups to discuss several topics with like-minded researchers and to work collaboratively in an interactive environment and upload projects so that the interested people can collaborate or learn. Researchers can also create their own Groups and invite fellow researchers to join. Users can create public Groups which open for all ResearchGate members or private groups to share classified matters. ResearchGate is one of most popular and commonly used professional OSN to provide extensive information about scientific events such as seminars, workshops, and conferences. It plays a vital role for scholars to discuss their research work with like-domain researchers.

3. Xing

Xing has most of the features same as LinkedIn professional OSN with the users mainly from Switzerland, Austria, and Germany. However, it enables closed group discussions between specific company members and business individuals.

XING is a career-oriented social networking website for professionals which provide its members facilities such as create personal profiles, join groups and discussion forums, and other professional community features. It's basic membership is free of cost but in order to avail many core functions, like searching for people of same interest, qualifications, etc or messaging people and connecting to person one is not already

connected, one has to be a premium member. Premium membership is not free, usually, comes at a monthly fee of some dollars.

Professional social networks can enable a company to recruit perfect employees and is considered as a vital platform for professionals hoping to create business contacts in order to make progress in their career. The professional OSNs are not limited to above three only, currently, there are various other OSNs especially designed for business tycoons to expand their professional network like Academica [19] is a website purely designed for academics where users can share their papers, books, and browse the network of researchers of their domain.

D) Discussion Forums and Blogs

Discussion forum and blogs are virtual places on the web where people can take part in different conversations and information can be shared more easily among a group of people irrespective of their geographical dispersion.

There are four different types of discussion forum including Standard Discussion Forums (SDF), Single Simple Discussion Forums (SSDF), Question Answer Discussion Forums (QADF) and Each Person Discussion Forum (EPDF). The SDF is most useful for big discussions such as discussion forums which provide guidance to scholars or where the students are provided assignments or general questions. SSDFs are designed to discuss very specific topics only where students are able to reply to a posted topic or other student answers. The QADF where we want our question to be answered by others on the network and finally the EPDF is the networking site where every member can ask about anything, relevant, irrelevant, long discussions, short questions, etc. Users have the freedom to ask and answer any question. We have an enormous number of discussion forums available, some leading ones are briefly discussed as under

1. Baidu Tieba

Baidu Tieba is a social discussion forum with more than 280 million monthly active users based on the keyword searches in the Baidu search engine (China's search engine). This discussion forum enables its users to create social network groups based on specific topic, using the search option, or to join already existing online social groups

2. Quora

Quora is a question-answer based social discussion forum where questions are asked, answered, even edited and organized by users of the group. Actually, the aim of Quora is to create for each question, a page that contains best possible resource for the public who are interested in that question. It also allows its users to create homepages based on user interested features and can follow related topics, questions, people, etc. Currently, the Quora website holds more than 400,000 different topics of questions and answers and every day hundreds of topics are getting added to the Quora by a huge number of people.

3. Skyrock

Skyrock [10] is an online social networking website that allocates its users a personal storage space online to create and post blogs, create profiles and exchange messages between other users on the network in seven different languages. Skyrock was ranked as the world's seventh largest social network with over 21 million visitors. Skyrock has turned into a social media hub with major functions including blogging, adding a personal profile and conversation with friends and other site members. Now, is clearly understood that professional social networks are generally designed to meet the requirements of the professional individuals like scientists, academicians, and business tycoons.

E) Dating OSNs

Online Dating social networks enable strangers to find and introduce themselves to new persons over the internet, with the aim to develop personal, romantic, or sexual relationships. These websites allow users to become members by simply creating a profile and uploading personal information such as age, gender, sexual, location, etc.

Nowadays these dating OSNs play a great role in online matchmaking, and other wedding services. They provide users new and most popular ways to meet a new partner. There is a variety of dating OSNs which are

growing rapidly and most of them focus on very specific groups or interests. For example, OSNs for seniors citizens, specific religion people, fitness-oriented people and for the people who are interested in more adult activities [11]. Here in this section, we will briefly explore some of the coolest and trendy dating OSNs which are most commonly used by the public for a variety of reasons.

1. Badoo

Badoo is a dating OSN operating in more than 200 countries with more than 20 million monthly active users. It shares details about people which are very near to you based on their location and residence. It also enables its users to see who else is on the app in a different area or another part of the world at the same time. Another unique and free feature provided by Badoo is that it enables its users' swipe right (yes) or left (no) on other users' profiles. If there is a match the two users are notified

2. Match.com

Match is the largest online dating site where users can send and receive messages from the other like minded people for the purpose of dates, marriages, and relationships. This dating OSN provides a number of functionalities to its users like It enables likely dating people to have a conversation over the phone (matchPhone)[13] without sharing their contact numbers between the two, allows like-minded people to text message each other anonymously, provides voicemails online service to listen to numbers. This whole conversation is carried out in a well-controlled manner by the site administrators to ensure the user's privacy and security as well, users have complete control over who can contact them and can block someone from calling or texting with just a single click.

3. BeautifulPeople

BeautifulPeople is one the biggest online dating networks which ensure its members to find a perfect match for them. More than 700 couples have got married with the help of this site. BeautifulPeople is considered as the largest dating community of attractive and good looking people in the world [14]. People join BeautifulPeople not only to look for a perfect match but for ideal jobs as well. Besides these things, the BeautifulPeople dating OSN provides its users a number of facilities including joining events and parties hosted by a fellow member, membership to clubs, etc.

Nowadays, online dating sites play an important role in creating personal relations with other interested users. A huge number of online dating services currently exist. Some require membership to get connected to a base of diverse users looking for many different types of relationships. Other sites are based on features like interests, location, religion, or relationship type they are seeking, etc. As far as the revenue of these sites is concerned, some sites are completely free and depend on advertising for revenue, whereas some sites need registration fee. The technology enables these dating sites users to have phone and text message conversations while controlling their privacy.

OSN Category	Example(s)	Purpose
Pure Online Social Network (POSN)	Facebook, Twitter, Orkut, Friendster	Establish social connections, new friends, share information.
Professional Online Social Network	LinkedIn, Researchgate, Academia, Opportunity	Establish professional connections, find job opportunities, research collaborators, etc.
Discussion Forums and Blogs	Quora, Baidu Tieba, Skyrock	Discuss events and topics, ask question, answer questions, etc.
Media Sharing OSNs	Instagram, YouTube, Snapchat, etc	Share photos, videos. Comments, like photos and videos
Dating Online Social Networks	Badoo, match.com, BeautifulPeople, etc.	Create personal relations, ideal matches, etc.

Fake Profiles on Pure Social Networks

According to Facebook an account managing and using by an individual other than his principal account is fake. Fake profile owners have a number of goals on the mind while creating these fake identities on the social networking sites including spamming, phishing, clickjacking, harassing or stalking an individual or a group, defamation, identity theft, personal information disclosure, etc.

There are a number of websites where from the Facebook users can buy thousands of fake fans or followers for their pages and profiles respectively². Nowadays buying and selling Facebook fans or followers is a multi-million dollar business, people especially the programmers code clever piece of software to automate the creation of profiles.

Several profiles are established and maintained for the purpose of spamming Facebook groups with ads (Spambots). They promote brands and products for sale, usually the same thing over and over. There are various other types of fake profiles existing on POSNs such as stalkers- these are the accounts created by people to track the activities of the person whom they are unable to search using their real accounts, for example when a user blocks someone making the two invisible to one another. Both the parties can't see posts or comments the each other's, even if they have common friends. Another kind of fake profile is known as work branded profiles where the user creates another profile on some existing person's name for the purpose of fun and entertainment. Page management and add buying accounts is another type of fake accounts being created on OSNs like Facebook and Sena Webo established by corporate marketers for the purpose of keeping the control of a Facebook Page separate from individual accounts. These accounts can also be leveraged for media buying, advertising, sometimes for financial gain and digital blackmail. Similarly, there are troll accounts maintained by the people in order to quarrel or upset other users, by posting provocative, extraneous, or irrelevant messages in online groups or user profiles with the intent of provoking readers into an emotional response. Impersonator is another most heinous of fake Facebook profiles where people are using another person's name intentionally to trick other people to believe that they are real persons and later perform several malicious activities.

Hopefully, we have seen that there are many different reasons why people set up fake accounts. Few are considered as innocent, whereas few others have dishonest intention. Many POSNs are developing and incorporating different algorithms and other technologies to detect these fake profiles but still, they exist everywhere. Therefore we need to take care before joining a network, otherwise, we are likely to get unacceptable results.

1. Fake profiles on Media sharing OSNs

Fake profiles on photo and video sharing social networks are not new to the market. On media sharing OSNs like YouTube it has been seen that people re-uploads original content pirated from another YouTube channel and try to earn ad revenue from it. In other cases, people create fake YouTube channels to defame others by uploading their confidential or very personal information. Users also subscribe their own channel using other fake email addresses to increase subscriber count & show yourself as an established YouTube Channel so that YouTube will serve ads to their channels or to gain the popularity among other YouTubers. Similarly, there are fake profiles on one of the popular photo sharing site- Instagram, where users create profiles to upload the content which they don't want to show to everyone like family and relatives. It has been seen that there is a fake version of Instagram called Finstagram where a user shares real, unedited and very personal photos between close circles of friends. Finstagram accounts are mainly setup by teenagers and youngsters to posts images intended for specific friends only. Besides that, there are various other people who establish and maintain bogus identities on different media sharing OSNs to perform illegal activities like uploading pictures and videos against some political parties, group or individual, etc.

2. Fake profiles on Discussion forums and Blogs

OSNs like discussion forums and blogs are the platforms basically created to offer the people a medium to exchange the information and opinions seamlessly. There can be several reasons which will lead the users to

create fake accounts on such networking sites. Posting inappropriate content is one of the reasons for using fake identities. Discussion forums and blogs allow people to speak their mind but they can also be used as an effective breeding ground for posting potentially abusive statements. Real users may hide themselves under fake identities for asking absurd questions, making abusive and hateful comments (racial, sexual, religious, gender, etc.), sharing violent messages and so on without being any harm.

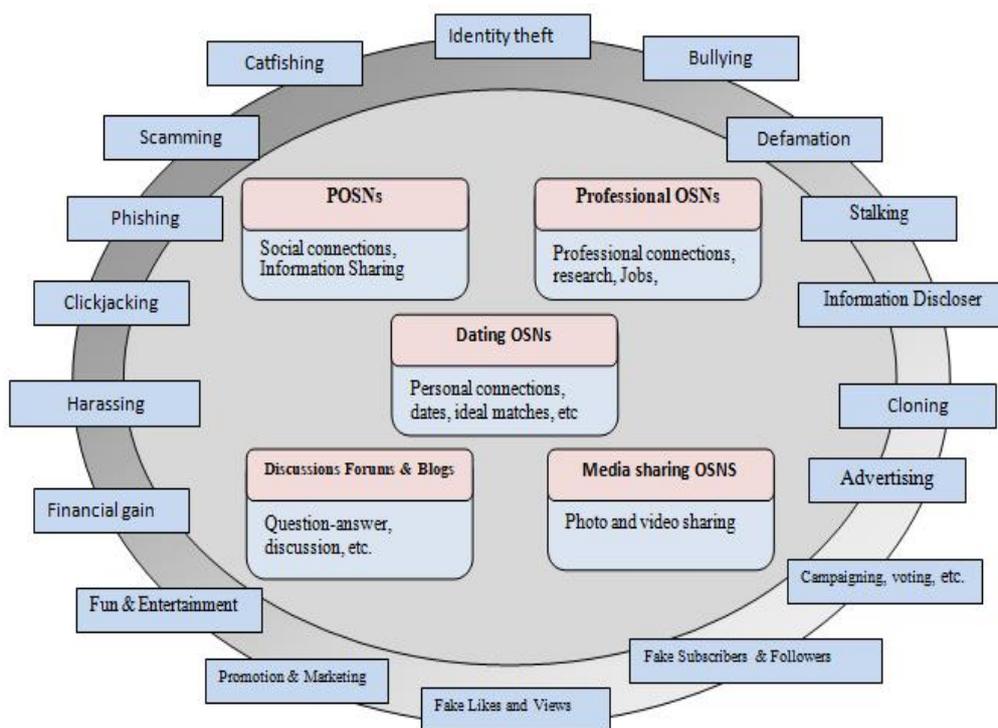
Fake accounts can also be used to defame an entity such as a person, a group, an organization, etc. Defamation is the act of destroying the reputation of someone by issuing false, offensive or unjust statements. One can use forged identities to humiliate and ruin the image of the opposition party. Defamation is a serious and most observed problem on the Internet forums.

Another reason of forming fake accounts on digital forums includes earning name and fame by false means. Fake accounts can also be used to make money by endorsing and making bogus claims. One may pretend influential personality to praise or create the illusion of support for a product and to make other users believe that a particular product is good to invest money. For instance, two accounts can be created in parallel to support each other for the sake of advertising. In this case, one account will be used to post reviews for a product, and another account will be used to reply the post that supports the product which largely fools the real users into believing the product.

The tendency of people of getting fake views, upvotes, followers, and likes in order to gain popularity also gives rise to a proliferation of forged accounts. These accounts can also be created, probably by marketing companies who charge money for farming views and upvotes. In such cases, the fake operator generally does not question or answer and is only concerned with following and upvoting certain posts. An upvote signifies in Quora that the answer was helpful and the post with the high upvotes is shown at the top of the forum. People may even run bots to serve the purpose with least amount of time and effort.

1. Fake Profiles on Professional OSNs

A growing number of hackers are also targeting professional social networks for creating fake profiles. However, the number of fake accounts is comparatively much lesser than pure OSNs but they do exist here as well.



It is worth to think about why these accounts exist and what attacker usually gains from these sites. Well, obtaining the personal data that the users share with their connections is the primary reason for the existence of fake profiles. Adversaries can extract a number of information from their connections, including personal and professional email addresses as well as phone numbers for a number of malicious activities. For example, the scraped information could be further exploited to send spear-phishing emails. Fake accounts will also let the attacker track the activity of the users in order to know who they interact with, who do they know, and who do they work with and so on. The attacker can know the detailed information about user's history

Attackers may also create a fake profile to trick the employees of an organization into talking and sharing sensitive and confidential details by pretending that they are employees of the same organization. Fake profiles can also be used to run hate campaigns. One can gather the e-mail address, pretend an employee of an opponent company and issue public insulting messages on their name. Fake users may also show themselves as recruiters for fake firms. Real recruiters have already been using the service for finding potential candidates. Therefore, under the guise of a recruiter, these fake accounts can easily enter into the networks of real business professionals since real users also expect to be contacted by recruiters. Fake recruiters can lure the job seekers into giving up valuable information.

LinkedIn is a prime target for scammers who are looking to get connected with professionals in a variety of industries. It helps them to map out the networks of business professionals and establish a sense of credibility among professionals. The fake profile can also be designed to appear more qualified than reality in order to get higher level people like CEO's to get connected when they normally would not. Furthermore, the fake accounts can stuff their profiles with keywords like "Electrical Engineer", "Security Manager", etc in order to gain more visibility and classified information. On the sites like ResearchGate, fake profiles might be created to claim illegal authorship of other's work as their own. More interestingly, ResearchGate itself has been accused for setting up fake accounts for scholars and academicians who never registered on the site and also for posting articles without authors' permission [21].

2. Fake profiles on Dating OSNs

Most of the fake profiles on dating sites have the aim to create illegal connections like sexual relations, etc. There are a number of brides and groom fake profiles on shadi.com who have setup their profiles on some other names and looking for ideal partners. Once someone shows interest in them they start taking advantage by requesting the personal contact numbers and other personal information. Usually, they cheat people and play with their emotions.

One of the most dangerous people on dating OSNs is Catfishers [15]- a person who uses the online dating websites to tempt people into a scam romance. Catfisher's main aim is financial gain, by establishing an online relationship with other users and ultimately asking for money. Catfishers exploit fake profiles to lure weak women into falling in love and transferring cash and other beneficial stuff to them. Besides financial gain, other goals of these phantom profiles are to gain pleasure from online communications and manipulation.

The issue of the fake online dating profile is rising like a tsunami and continues sinks all the real singles out there in online dating land. It has been estimated that in every 10 online dating profiles at least one is accounted as fake, and per year more than \$50 million is lost to romance scams. Fake online dating has opened the gates for liars, thieves, cheaters, and the sex industry to take the benefit from online dating sites.

Conclusion

A number of OSNs has been developed from last two decades to ease the social life of netizens and other specific individuals. OSNs have been developed for almost every kind people ranging from business tycoons to an ordinary unemployed individual, from fun and entertainment loving public to ideal match seeking people. But unfortunately, some specific community of people is exploiting these OSNs for their personal benefit. The existence of fake profiles on these OSNs is one of the critical issues encountered by normal users. Adversaries create different kinds of fake profiles on different categories of OSNs with different intents. For example on POSNs fake profiles are created to share some illegal, unlawful content like hatred speech,

pornography, etc. professional OSNs are also suffering from the flood of forgery accounts which are established by the people to obtain professional contacts and critical business information. Similarly other categories of OSNs (Media sharing, Dating, and Discussion forums and Blogs) experience a variety of uncharacteristic users intended to perform a number of malicious activities including identity theft, catfishing, stalking, trolling, financial gain, get fake followers and subscribers, advertising, etc.

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