

# Learning the student's sufferings using Social Networks

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**Abstract**— In the past two decades, due to the advancement in mobile, computing, internet and electronics technology the young generation has turned smart along with the smart cities and villages. People are adapting the globalized changes and these changes are not part of everyone's life. The number of Facebook users fall or rise in every three months. Due to excessive usage of the above mention technology people are now suffering from various disorders. The problem of mental distraction and disturbance has increased among the engineering students due to their affection towards online social networks. In this paper, we are covering the impact of social networks on teenagers and engineering students to identify and understand the causes behind it. We have analyzed the collected data with the experimental work carried out on teens between the age group of 12-18 years. In this paper we are covering certain changes in the expressions and emotions in the life of teenagers opted engineering as their career. We are focusing on application and drawbacks of online social networks as the most popular way of connectivity among the young generations.

**Keywords**— privacy; social networks; mental health;

## I. INTRODUCTION

The charm towards engineering is the career priority among the students after their schooling as it also contributes in the social and economic development of the nation [1]. The government of India has taken several steps to setup and upgrade the new engineering institutes in the past 2 decades. In this paper we are discussing only the changes in the mental health expressions among the engineering students. Parents are spending a lot of money to boost the wards career [2], even beyond their limitations, whereas government is also supporting by providing various scholarships [3]. Inspire of all these, the quality among the students is not up to the mark. With this analysis we are trying to find out the factors which may be considered as hurdle in the career of a student. As most of the celebrities are available on social networks so it also attracts the youngsters and others to follow their superstars; whether an athlete, actor or a politician. The number of fan followers decides their popularity. We are more into unrealistic world, where we are more bothered about photos, status tag lines and updated in the posts instead of anyone mood internally. The next section describes various applications of social networks in details.

## II. APPLICATIONS OF SOCIAL NETWORKS

Social networking has been disseminated over last few years. It provides medium for sharing our ideas, thoughts, believes and making friends [4]. In this era of technological advancement, social networking has found an important place in our lives. We describe some of the applications of social networking which largely affect our livelihood [5].

### A. Social analytics

The social networking provides a platform to carry out various research activities. There is large amount of data available on different topics; [6] we just need to have the right question as how to bring this data for knowledge gathering. We can find interesting patterns from the data. For instance we can perform emotional analytics on Facebook and Instagram post or tweets via twitter; [7] hence judge the emotional state of a person and evaluate the mindset [8]. This can provide valuable information. The major utility for the social analytics can be predicting the behavior of a person determining the symptoms of depression from the views expressed on social media and can prevent any extreme measures like suicide.

### B. Social Connectivity

It serves a great medium to connect with the people from various walks of life and reconnect with the old friends. Most of the influential personalities also uses social networking platform to express their ideas and views [9], one can connect with them through Facebook, Twitter, Instagram, LinkedIn etc. and follow what they are up to [10].

### C. Common interest community

Each individual has a distinctive personality and different interests. And it's always nice to meet with the likeminded people or be a part of a group where our interests lie. Social networking [11] provides this amazing platform, to be a part of a community which harbors mutual interests.

### D. Information sharing

The way information is shared among friends in a social networks and the resulting ways in which the social network remains [11]. The benefits of sharing information with friends and family may present the behavior of peoples in

such a situation and characterize the existence and computability of stable information sharing on their updates.

#### E. Provide a promotional platform

It provides a medium for promotional activities [12]. Many organizations use the social networking platform to promote their organization, or for advertising their product.

### III. CLINICAL DEPRESSION

Depression is a major health problem which is often been neglected. There is need to create awareness regarding the mental health because if ignored it can result in drastic consequences, as far to the point that person commits suicide.

The level of seriousness of depression is often undermined and we should address this issue headfirst. But in order to do so, it is essential to understand it first. The symptoms of depression are [13]:

- Persistent sadness and anxiousness
- Feeling hopeless and pessimistic
- Feeling irritable
- Feeling guilty, worthless, helpless
- Loss interests in hobbies or routine activities
- Fatigue
- Walking and talking slowly
- Loss of appetite
- Difficulty in sleeping or concentrating
- Headache, cramps, body pain
- Suicidal thoughts or attempts

If the above symptoms persist for over a period of two weeks then the person is diagnosed with depression [14]. There can be various reasons for depression:

- Family history of depression
- Physical illness or medications
- Major life changes

The focus of our study is on the adolescents. We implement the social analytics technique into the medical field. So we try to analyze the symptoms of depression amongst the adolescents. For the analysis we account for the Facebook data. Most of the people of any age group are quite active on Facebook; they share their ideas, moods and feelings via posts [14], for their friends to see. We take this data and analyze it.

### IV. LITERATURE REVIEW

Lada A. Adamic, et al. [15] attempts to study Facebook memes and how they become widely popular, they define the relationship and circumstances which results and formation of large friends network on Facebook. The authors define meme as the self-imitating information that are largely shared on the social network. Their purpose can be social humor or spreading awareness regarding important issues and also help determining the hacker threats. The researchers collected the data set from various anonymous status updates

which basically comprised of copy paste instructions and strings like “how you met me” or “how we met”. They examined 2,570,182 posts of meme, 24,199,921 comments excluding the user response to the comments. The average of 7.5 distinct people commented on how they met the user. According to the study meme were quite popular amongst woman as 79.7% of the post made by them. However their data examined the English variant of meme so only English speaking country were most represented. [16] They define four variants of memes. The authors try to analyze the responses to memes from the comments to get an insight as to how the friendship originated. They ignored the post which has the word “lie” and only consider the first comment of the person. The data was noisy; [17] however they try to perform pattern analysis on this data. From their work the researcher gathered that most of the Facebook friendship began at school even if they have not been in school for over years. They also conclude that different shared attributes can give different predictive results.

Patti M. Valkenburg et al. [18] focuses on effect of the networking sites like, Friendster, MySpace etc., on the well-being and self- esteem of the adolescents. The data of 881 Dutch adolescents was collected from a networking site CU2 by carrying out a survey 45% were boys and 55% were girls. Whenever they accessed their profile a survey popped up onto their screens and the participation was voluntary. The statistical analysis was carried out in AMOS 5.0 software. The result of their study implied that the self-esteem of the adolescents was affected by the tone of the feedback they received on their profile. Positive comments increased their self-esteem whereas the negative comments decreased their self-esteem. About 78% of adolescents generally received positive feedback on their profiles; however 7% of the rest always received negative feedback on their profile which led to their lower self-esteem. About 35% people found friends through the site and 8% found love. But the number of friendships or love relationships does not impact the self-esteem.

Charu C. Aggarwal [19] talks about the popularity of the social networks which has been seen over the years. The dissemination of online social networks like: Facebook, LinkedIn, Twitter, Flickr etc. has been discussed. [19] Primarily Facebook is used for social interactions; Flickr is used for content sharing and also provide social interaction. The author defines social network as the network of relationships or interactions. The nub of the discussion is that social network defined as a graph where actors are denoted by nodes and the relationship between the actors is represented by edges. The author defines two fundamental analyses on social networking data: 1) linkage-based and structural analysis: analyze the behavior of the underlying network 2) content-based analysis: analysis carried out to improve the quality of the content. The social networks have abundant data which can be used for various research purposes as discussed by Charu [19]

Statistical Analysis of social network

Community detection in social networks

Node classification in social network

Evolution in dynamic social network  
 Social influence analysis  
 Expert discovery in networks  
 Link prediction in social networks  
 Privacy in social networks  
 Visualizing social networks  
 Text mining in social networks  
 Integrating sensors and social networks  
 Multimedia information network in social media  
 Social tagging

Gueorgi et al [9] analyzed the dynamic social networking data. The dataset was 43,553 in size which comprised of undergraduate and graduate students, faculty and staff members, and was collected from a university in USA. The data consists of e-mail interactions during their academic year of 2003-2004. The data was encrypted to ensure the privacy protection. The authors try to infer the interactions carried out by the target population, from the time-stamped email headers.

The authors in [9] focus on the issue of information overload for the users specifically using the social network Facebook. Although Facebook provides the feature of friend list; specific lists, to reduce the information burden, but it is not quite efficient. The researchers give a demonstration of the Facebook application viz. Friend list Manager. A subset of total number of Facebook friends of users is contained in the friend list, and the control of the friend list is by default with the user. Friend list collect and view the content of the members of the friend list, [20] and users share content only to the members of the friend list. There are limitations to the friend lists and hence not used widely. In their work the authors provide a more effective way to collect the content specific to the friends and users have privacy control on their own content. The authors [9] their study and analyses the structural properties of the online social networks. The data for the study is collected specifically from the four social networks: Flickr, YouTube, Live Journal, and Orkut.

In [21] the data comprises of over 11.3 million users and 328 million links. The authors conclude that social networks are structurally different from the Web. They carried out their study by focusing on the user graph of the social networks. Social networks have large number of symmetric links and higher level of local clustering, and these two factors affect the working of the algorithms and applications designed for them.

Christo Wilson et al [22] give detailed analysis of the user interactions in Facebook social networks. An interactions graph is proposed by the authors so that by quantifying the user interactions the social links can be made more meaningful. The data set is collected from the 22 largest regional networks on Facebook as of 2008. The mini feed data was collected from San Francisco regional network. To crawl Facebook the authors used Python with

support of remote method invocation. The authors noted that majority of the users account were Weakly Connected Graphs (WCC). The complete coverage of WCC can be done by breadth first crawling because the social links on Facebook are indirect. First the user connectivity and growth characteristics of Facebook population were determined and the results were used to compare Facebook user population with other social network's population. Then the variation of the user interactions across different segments, time and applications were defined. Then from the Mini-Feed data user activities were analyzed. The authors concluded that user activity on Facebook is connected to their social links. An interaction graph was introduced which gave meaningful information on social networks. The use of interaction graph on social application RE improved its performance, but the system become less efficient for Sybil guard.

Moria Burke [10] performs a descriptive analysis on the Facebook users of USA determining the family relationship and the communication patterns of the parents with their children. The data reveals that parent-children have about 20-30 common friends and among st 19% of those are relatives. The data set comprises of the users who English-speaking and were monthly active users, who has other user friend mentioned parent or child as their relationships with them. The parent-child pair in the data has 16 year age difference and users at least 13 years old. To determine parent-child relationship and influence of parent on child, regression model was used.

Yabing Liu et al [12] gives a critical study of the desired and actual privacy settings of a user on Facebook. A survey on 200 Facebook users was done using the Amazon Mechanical Turk. Only 37% of the time the user expectations were met for overall privacy settings expectations. The study explains the Facebook users how to select appropriate privacy settings. The survey was designed as Facebook application and was hosted on a web server at Northeastern University [23]. The information collected by survey from the user's profile include: privacy setting for the uploaded content, [24] friendship connection among st the user and user friend list [26]. The authors conclude that users share half of the content on Facebook using default privacy settings. Users face problem configuring their privacy settings on Facebook and thus look for the different tools to manage privacy [25].

## V. DISADVANTAGES OF SOCIAL NETWORKS

### A. Backlash

Sharing offensive content online just to be adamant and heretic about sensitive issues like politics and religion divides the people and can take a violent form at extreme. These days we are becoming more selfie-obsessed [23] over sharing and fretting about reflects the ideology of narcissism.

### B. Cyber bullying and crime against children

Cyber bullying is a major concern which is seen quite prevalent these days. The social networks are an excellent platform for the bullies [24]. Bullying drastically affect

children. The children must be made more aware about the privacy control of their data to minimize the cyber bullying.

### C. Fraud and identity theft

If someone put any information on internet it is feasible for anyone to access it. No matter how strongly data is secured but there is always possibility a loophole. The cruel black hat hackers are always smarter, and in search of private bank information of any individuals [21]. We must be more careful about the information shared on internet.

### D. Time waste

Although social networks provide a great platform for social interactions over the internet. It is to realize that not only this social craze is trending, but also the waste of time. A study in [27] concludes that students are wasting their time on social networks.

### E. Corporate invasion of privacy

We don't realize but most of the times we willfully compromise with the privacy of our personal information. If in case social networks share the personal information to the advertising site, one might not be aware of this invasion of privacy [21]. Therefore before spending time on social networks, one must also be aware about these privacy invasions.

## VI. CONCLUSION

We have studied the views, data and results given by various authors and find that it is important to take care of the young generation. This study may be an indicator to a situation as covered in section V. Depression may be handled by take proper sleep, meditation, yoga, exercise and daily connect with your family, friends and maintain your patience in every situation, student avoid addiction of alcohol and smoking.

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