An Approach to Distinguish Between the Severity of Bullying in Messages in Social Media

Geetika Sarna, Netaji Subhash Institute of Technology, New Delhi, India
M.P.S. Bhatia, Netaji Subhash Institute of Technology, New Delhi, India

ABSTRACT

Users on the social media can share positive as well as negative information intentionally and unintentionally in the form of multimedia content without knowing its impact on other user, which threatens the security and privacy of social media. Cyberbullying is one of the risks associated with social media. Cyberbullying is an aggressive act carried out intentionally against the victim by posting harmful material on social media to harm his/her reputation. Aggressive act creates depression, anxiety in users which may lead to diversion of attention and sometimes suicidal actions. In this paper the authors have included a survey on recent algorithms which work on detection of cyberbullying. State-of-the-art studies only focus on the detection of cyberbullying but not on the preventive measures against cyberbullying. In order to tackle this problem, the authors showed how the severity of the bullying in messages helps to find the real culprit.

KEYWORDS

Cyberbullying, Mannerism of User, Multiclass Classification, Security and Privacy, Severity of Bullying, Social Media

1. INTRODUCTION

Social media is a set of online applications which is constructed on an idea, theory and technology of Web 2.0 that permit the creation and exchange of material generated by the users ((Kaplan, A. M. & Heinlein, M. (2009)). It is basically the web sites where individuals or a group can interact freely, discuss and share information about each other and their lives, using a text, pictures, videos and audios. Social Networking is basically a form of social media used for interaction, education, information sharing and entertaining purposes. According to Margaret Anne Carter (Margaret, A.C. (2012)), about 72% of internet users use social media and about 50% users spend 3 hours and more than this on the social sites like Facebook, You Tube, Twitter and Flickr etc.

Since with the advancement in technologies and connectivity, more and more people are joining social media which makes it more prone to various types of threats like koobface, terrorism, identity theft, cyberbullying. Keeping security of users in mind, we would like to analyse various challenges pertaining to security and privacy on various social networking platforms. Cyberbullying is one of the main challenges that comes under security and privacy. Cyberbullying normally occurs among youngsters on social networking sites (SNS) (Lenhart,A., Madden, M., Smith,A., Purcell,K., Zickuhr,K. & Rainie, L.,2011). It has become very major and alarming problem among kids and teenagers as they spend most of their valuable time on social media. It has also been associated with several emotional, psychological and physical problems (Hinduja, S. & Patchin, J.(2007))(Ybarra, M.L., Mitchell,
K.J., Wolak, J. & Finkelhor, D. (2006)), as well as may lead to poor academic record (Tokunaga, R.S.(2010)) and also results in increase in suicidal ideation (Hinduja, S. & Patchin, J. (Ed.) (2010)).

Bullying is basically a kind of misbehavior that normally takes place between two people. It physically or verbally hurt another person. According to Kowalski, Limber, & Agatston (Kowalski, R.M., Limber, S.P. & P.W. Agatston.(Ed.) (2008), bullying is an inequality of power or strength . If this bullying is observed online, it becomes cyberbullying. Cyberbullying is to communicate or post embarrassing, harmful, harassing material or to engage in other forms of social aggression using the Internet or other digital technologies (Willard, N.E.(Ed.) (2007)).

As Data Mining is interdisciplinary approach, it has been used in various areas like Social media, medical sciences, biological sciences, networks, CRM(customer relation management)(Ranjan, J. & Bhatnagar, V. (2008))(Ranjan, J. & Bhatnagar, V. (2009)) etc. Various approaches have been used in order to mine the data to get useful information. In this paper, data mining is used to get bullying information from the messages posted on social media.

In this paper, we have come up with a survey of various methods of detecting cyberbullying and summarizing those methods. This survey will give the readers/researchers insightful analysis of the concept “cyberbullying”. State-of-the-art studies on cyberbullying only focus on the detection of cyberbullying but not on the preventive measures against cyberbullying. So, it is necessary to take preventive actions against it to find the real culprit. We propose that incorporation of the identification of the severity of the bullying in messages posted by the user will give the more accurate classification of the mannerism of user to take necessary actions against them. Also most of the authors focus on binary classification and not on multiclass classification. In this paper, we have found the category of messages posted by user on Twitter based on their severity of bullying which needs concept of multiclass classification. Then we prepare a graph which we use to find the mannerism of the user.

The remaining paper is organized as under. We gave the Literature Survey in Section 2. In Section 3, we proposed a method to handle the problem observed in during Literature Survey. In Section 4, we gave the expected results. In Section 5, we concluded the paper and draft the future course of work.

2. LITERATURE SURVEY

This section includes various research challenges of social media. Then it focused on introduction of Cyberbullying which comes under the main research challenges of social media. After that the related work for the detection of cyberbullying is given.

2.1 Main Research Challenges of Social Media

1. **Limiting fragmentation of the social Network**: Sometimes new application or new game tends to build a small social network and that application is limited to that social network only. So the research challenge is to make application that allow cross platform information exchange securely and avoid the fragmentation.

2. **Discovery of Communities in Large Scale Social Networks**: As social network is dynamic in nature. Communities are dynamically changing with time, so it becomes very difficult to detect communities in social network.

3. **Security and Privacy in Social Networks**: Security and Privacy is also one of the main challenges of social media. How to provide security to the users and how to protect the data exchange between users and between communities is also a very big challenge.

4. **Social and Ethical Issues in a Social Network**: Social media faces Social and Ethical Issues. Protection of child exploitation, sharing of information has to be tackled properly.

5. **Extracting Knowledge from Blogs, Tweets, and Other Social Media**: As blogs, tweets are very small in size, it become very difficult to extract information from it, which is also a very big challenge.
When the Ethic is Functional to the Method: The Case of E-Mail Qualitative Interviews
www.igi-global.com/chapter/when-ethic-functional-method/28295?camid=4v1a