Chapter 13
Sentiment Analysis of Tweets for Estimating Criticality and Security of Events

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ABSTRACT

Social Media has become one of the major industries in the world. It has been noted that almost three fourth of the world's population use social media. This has instigated many researches towards social media. One such useful application is the sentimental analysis of real time social media data for security purposes. The insights that are generated can be used by law enforcement agencies and for intelligence purposes. There are many types of analyses that have been done for security purposes. Here, the authors propose a comprehensive software application which will meticulously scrape data from Twitter and analyse them using the lexicon based analysis to look for possible threats. They propose a methodology to obtain a quantitative result called criticality to assess the level of threat for a public event. The results can be used to understand people's opinions and comments with regard to specific events.

The proposed system combines this lexicon based sentimental analysis along with deep data collection and segregates the emotions into different levels to analyse the threat for an event.

1. INTRODUCTION

Social media websites are growing at a very fast rate throughout the world. The increase in the reach of the Internet to more people every day is also helping this. It is turning out to be one of the major industries in the world and is revolutionising several existing industries such as print media and marketing. Organisations are also benefitting from this advancement as they can now enhance their processes such as understanding customer's opinions, analysing reviews and feedbacks. However, with the increased availability of people's data online, there is an increasing concern for people's privacy and security. The advancement in social media access and increased available features has also started attracting potential hackers. This makes it possible for several crimes to occur such as selling private information, usage of such social sites to do secret transactions that are banned. Due to the massive size of the data available online, sometimes activities and potential threats can also go undetected. This motivated the development of Application Programming Interface that is freely available for people to use to create software that can track these crimes online. But owing to user's privacy these tools have limits to the amount of data that they can get. There are trackers inside these tools that ban people automatically the people that try to over use it. There are many undergoing projects in many universities that endlessly utilize everything they have to build an efficient product that helps law enforcement agencies to detect crimes in a better way.

In this work we focus on applying sentimental analysis to Twitter data to obtain tweets that can possibly lead to disruptions during an event. To use the Internet and obtain Intelligence, monitoring important sites is necessary. Useful data can be obtained for law enforcement purposes from social networking sites that can be processed for obtaining insights, detecting threats, making predictions and performing many other analyses. Such analyses will provide private organizations, authorities and law enforcement agencies to make decisions and obtain a better understanding of their people. Most analyses, including this analysis use the data that are publicly visible on the web. Users always have the option to choose their data to be publicly or privately visible. The trust and privacy gets breached when an organisation or analysis uses data that is wrongfully obtained. The proposed system is a data collection and text mining application for Intelligence and Law enforcement agencies.

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