

# Chapter 1

## The Potential of Cognitive Social Mining Applications in Data Analytics for Protecting Social Media Users for National and International Security

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### **ABSTRACT**

*Using social media has become an integral part of life for people of different demographics for information exchange, searching, maintaining contact networks, marketing, locating job opportunities etc. Social networking is used for education, research, business, advertisements and entertainment. Social media platforms are prone to cybercrime, which is a threat not only for the individual user but for national and international security according to the National Security Council Report. With the advent of big data storage and analytics abilities, decision making is a potential problem and requires smarter machines to organize data faster, make better sense of it, discover insights, learn, adapt and improve over time without direct programming. Cognitive computing makes it easy to unveil the patterns hidden in unstructured data and make more informed decision on consequential matters. In this chapter is a discussion of the challenges and opportunities in social mining services and the applications of cognitive technology towards national security.*

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## **INTRODUCTION**

The emergence of social media and its tremendous growth has influenced the change in information and technology over the past two decades. The increase in development of mobile technology has a major role in shaping the impact of social media. Social networking accounts for 28% of all media time spent online. It is used for a wide variety of reasons like socializing, communicating, sharing of information, etc. Social media which was once considered as an unofficial tool has now turned out to become more essential and occupies the board rooms for business discussions. For many organizations, social media is the backbone for creating brand awareness, marketing their products and services and conversions. The commercial value of the social media could not be ignored, and the online presence of organizations and constant nurturing is of prime importance for increasing the online sales and sustainability. It has become a potential digital marketing tool for all range of businesses and entrepreneurs to leverage social advertising, boost brand awareness, for lead generation, to increase the sales, to engage, to increase the user traffic on a web site, increase inbound traffic, improve search engine optimization, increase conversion rates, satisfy customers, etc. Social media platforms are used by retail companies, investors and traders of the financial markets, public health and sociology departments, public and government officials, media startups, etc.

Cybercrime is a threat for the individual users as well as for the nation. One of the major reasons behind is that, the social media user groups fail to follow the ethics to be followed. The ethics of identity and community on social networking services, anonymity and commitment are not followed among the social media users and become victims of cybercrimes (Anandakumar, 2014). Identifying the offender and eradicating cybercrimes is a challenging task for the cyber security force. Security threats are identified in the form of Viruses that can infect millions of computers using malicious links, Attacker with access to account ids could masquerade as that user and post malicious content, Social Engineering Attacks, Identity Thefts, Third party applications, Business Data, Professional Reputation, etc.

With the increasing dependency of a nation's economic and financial institutions on information technology, a cyber-attack against them will lead to an irreparable collapse of the country's economic structures. The reciprocation events are ineffective or sometimes alternative arrangements are not available which makes it difficult to think of the adverse situations it will lead to the Nation. The sectors like Income Tax, Police, Judiciary and Travel, Passports, Visa are already brought under the realm of e-governance in many nations. The E-commerce and e-banking sectors could also be affected more seriously which will have adverse effects on a nation's economic and financial positions. Such damages are more catastrophic and are irreversible. New technologies and approaches have to be identified for maintaining and securing the welfare of the individuals and the nation from the ill effects of cyber-attacks emanating from social networking sites.

The challenges in mining the big data is that it contains data and metadata which cannot be readily treated using traditional analysis tools, combining data from different sources like micro blogs, blogs, real-time markets, customer data and reviews to get meaningful insights. The correctness of the end result is based on the quality and quantity of the data. Restrictions in collecting data from websites, sampling and filtering data streams by providers, spread of unsubstantiated rumors, changing human behaviors, non-humans/robots, replication of data and dynamic data size are some of the challenges in mining social data.

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