Chapter 6
Cognitive Social Mining Analysis Using Data Mining Techniques

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ABSTRACT

Social media are based on computer-mediated technologies that smooth the progress of the creation and distribution of information, thoughts, idea, career benefits and other forms of expression via implicit communities and networks. The social network analysis (SNA) has emerged with the increasing popularity of social networking services like Facebook, Twitter, etc. Therefore, information about group cohesion, contribution in activities, and associations among subjects can be obtained from the analysis of the blogs. The analysis of the blogs required well-known knowledge discovery tools to help the administrator to discover participant collaborative activities or patterns with inferences to improve the learning and sharing process. Therefore, the goal of this chapter is to provide the data mining tools for information retrieval, statistical modelling and machine learning to employ data pre-processing, data analysis, and data interpretation processes to support the use of social network analysis (SNA) to improve the collaborative activities for better performance.

INTRODUCTION

Socials media are based on computer mediated technologies to enable the user to converse with each other by their videos, post, comments, sharing etc. It allows individuals to create public profile in their domain to be in touch with other users within that network. The concept of Social network has also improved the technology of Web 2.0 by formation and exchange of User-Generated Content. Social network is the graph which comprises the nodes and links to form the social relations among social network websites to interact with each other for the online sources and contents.

Social network platforms permit rapid information exchange between users, organizations, individuals and even government of countries to pursue the activities of social network. The set of connections network permits the effective compilation of large-scale data which gives climb to major computational challenges. Most of the challenges have been solved by the data mining techniques to discover valuable,

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accurate and social useful knowledge from social network data. These techniques are also competent for handling network data viz., size, noise and dynamism. The information processing of social network datasets required enormous nature of automatically analyzing within a reasonable time.

Data mining techniques discover the useful knowledge from huge data sets to mine the noteworthy patterns, inference from data of social networking sites. This helps advanced results searches in search engines to understanding the social data for research and organizational functions.

Social sites provide privilege for the users to access the uncensored information post by them in real time for the broadcast. It also provides the platform to the use to express their views, opinions on products and services of the organizations to know their interest. This will generate the enormous volume of data which need to find a computational means to filter, categories, organize and scan the social network contents.

Data mining techniques are also capable to handle the social network anomalies like size, noise and dynamism to perform the automated information processing to analyzing the data within a reasonable time. Data mining techniques also enable the advanced search results in search engines to help in better understanding of social data for research and organizational functions.

This chapter provides the survey of data mining techniques range from supervised to unsupervised learning to analyze the data of social network to generate the meaningful knowledge and inference on the data. This chapter also includes the survey and anomalies of the social network site used by the data mining tools for the analysis.

BACKGROUND

Now a day, social networks became very popular due to increasing propagation and affordability of internet enabled devices such as personal computers, mobile devices and internet tablets. This is also a vital source of online interactions and contents sharing, assessments, subjectivity, influences, approaches, evaluation, feelings, observations. opinions and sentiments expressions in form of text, reviews, blogs, discussions, news, remarks, reactions, or some other document.

The authors used the data mining tools to mine patterns from social network data sites with advanced search results to understand the social data for research and organizational betterment.

User also takes the decisions, give opinions in a different form with very little or no restriction on information posted on social network. These view and opinion used by the organization for the betterment of their service.

There has been a lot of work done on as friend of a friend (FOAF) to look into how nearby and worldwide group level gatherings create and develop in substantial scale of social media platforms on the Semantic Web, Web administrations and online investigative affiliation.

It has been observed from the literature survey that most of authors described the data mining usage in the analysis of the social network sites data but what are techniques actual used to generate the meaningful information is not sated by most of the authors.

The main objective this paper is to show the data mining techniques used to generate the analyzed pattern from the social network data along with the implication and future scope of data mining in social network.