

Chapter 20

Social Networking Data Analysis Tools and Services

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ABSTRACT

Social networks have drawn remarkable attention from IT professionals and researchers in data sciences. They are the most popular medium for social interaction. Online social networking (OSN) can be defined as involving networking for fun, business, and communication. Social networks have emerged as universally accepted communication means and boomed in turning this world into a global town. OSN media are generally known for broadcasting information, activities posting, contents sharing, product reviews, online pictures sharing, professional profiling, advertisements and ideas/opinion/sentiment expression, or some other stuff based on business interests. For the analysis of the huge amount of data, data mining techniques are used for identifying the relevant knowledge from the huge amount of data that includes detecting trends, patterns, and rules. Data mining techniques, machine learning, and statistical modeling are used to retrieve the information. For the analysis of the data, three methods are used: data pre-processing, data analysis, and data interpretation.

INTRODUCTION

This Chapter on Social Networking Data Analysis Tools and Services introduces the various perspectives of the online social networking sites(OSNs), its various aspects such as its applications, types of data available on OSN, different types of analysis for these huge amount of data, the tools used to analysis these data, the platform components, system architecture and research issues on OSN. It will help the academicians, researchers and practitioners to improve their capacity to gain an accurate and deep understanding of about OSN. The term social network or online social network or social media is referred to depict web-based services that permit persons to make a profile inside a certain domain so that they may interact with other users in the specified network. Graph theory is applied in the social network that consist of *vertices* and *edges* employed to symbolize social relations on OSN sites. A huge number of domains and sectors, ranging from business analysis and economic to public administration,

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from governance to scientific researches in many fields, involve with social networking data analysis tools and techniques. On the one hand, social networking data is enormously important to increase the productivity in businesses and progressive discovery in research disciplines, that provide a lot of opportunities for the enormous development in many areas. OSN data are very complex because of its three features named as size, noise and dynamism. For the analysis of these data, data mining techniques are used for identifying the relevant knowledge from the huge amount of data that includes detecting trends, patterns and rules. Data, information and knowledge are three important data mining paradigms. The huge amount data in social networks datasets are needed for automated processing and analyzing of information within a realistic time.

Fascinatingly, huge data sets are required to mine significant model from data in data mining techniques. OSN sites emerged as an ideal platform to mine with data mining techniques and tools. Data mining tools may have varieties from unsupervised or semi supervised machine learning techniques to supervised machine learning techniques. Sometimes users make decisions based on contents shared by unknown person on OSN sites. These escalating the level of dependence on the trustworthiness of these sites. OSN has also provided users the freedom to give opinions and reviews in real time with very little or no restriction.

BACKGROUND

Social networking provides facilities to the users to share their views, photos, posts, videos and others contents such as their events and activities to connect with people in their network. It is similar to the inter personal social gathering in villages, markets, towns to discuss on the various issues and events.

But the main difference is that OSN enables users to connect with other users at difference locations, across the globe. Generally social networking can be noticed in different views first as which main purpose is to socializing with friends like facebook and instagram other can be networking for non-social interpersonal communication such as LinkedIn for a career and employment oriented site. So, there are many OSN sites through which people can be interlinked via cross-posting without invading the personal privacy.

The history and background of social networking is very interesting since the evolution of human civilization. It refers to the evolution of personal communication among the people. The medium of personal communication has changed a lot from the evolution of human civilization. The hand written letter was the oldest practice of communication across long distance from one person to another. It was started in 500 B.C., and became popular and broad medium in future centuries. In the year 1792, the telegraph was invented through which messages was delivered for the far distance than previous methods. Since through telegraph messages were short, it was a tremendous change in the communication in the society for the long period of time to convey news and information. Another way of communication started in the year 1865 was postal services for the personal, professional, and other communication. After that telephone and radio was another revolutionary invention in 1890 and 1891 respectively that are still in use today and developing day by day. Both has changed the lifestyle of people in the communication across the long distances immediately that was a new and amazing experience for mankind. In the 20th century, technology started to change immediately after the development of computers. Scientists and engineers started to develop the techniques to connect the computers that later lead to the birth of Internet. CompuServe was the earliest form of Internet in 1960s. Fundamental form of emails were

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