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GRAPH BASED RELATIONSHIP REPRESENTATIONS OF SOCIAL MEDIA STIES

Abstract

Globalization of data increased with evaluation of internet and social media sites. As the number of users increases in social media sites, the data from social media also increases in terms of billions or trillions. For example twitter and facebook has millions of connections so sharing information on these sites produce millions of data. The data generated by social media may be structured, semi structured and unstructured which can be commonly termed as variety of data. As social media data/information plays a vital role in analyzing and predicting important conclusions for various users according to their interest of analysis. To predict these, social media data has to be analyzed efficiently to find analytical results. The analysis of social media data can be done more efficiently by integrating graph theory algorithms with other analytical techniques like statistical, mining and probability techniques. So the graph theory plays a significant role in analyzing the social media data. The social media data can be represented as graphs. Graph representation is easy to solve complicated analytical problems. Properties and Information of social media can also represent as a big graph where big graph is a sequence of graphs which capture dynamic properties of data. Particularly in social media data analytics, graph theory is being used successfully by adopting the relevant theorems in various algorithms for example extracting frequent substructures, pattern mining from big data. The most popular algorithms which adopted graph theory are shortest path analysis, optimal path analysis, path existence analysis and vertex centrality. The algorithms used to analyze big graphs are Page Rank algorithm which calculates relative importance of web pages, Random walk with Restart algorithm to measure proximity of vectors in graph, diameter estimation algorithm to estimate diameter and radius in large graphs. Connected Components algorithm is used to find connected nodes in graphs. There are various algorithms existing which adopted various graph theory concepts and these algorithms are used to extract different properties of nodes in graph and information about graph. In this paper, role of graph theory in computer science is discussed particularly in data analysis. The various algorithms which adopted graph theory concepts and theorems are presented in this paper. The role of graph theory in the analysis of social media data also termed as social media data analytics are discussed in this paper.