عنوان مقاله:

Centrality and Latent Semantic Feature Random Walk (CSRW) in Large Network Embedding

محل انتشار:

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خلاصه مقاله:

kground and Objectives: Embedding social networks has attracted researchers' attention so far. The aim of network embedding is to learn a low-dimensional representation of each network vertex while maintaining the structure and characteristics of the network. Most of these existing network embedding methods focus on only preserving the structure of networks, but they mostly ignore the semantic and centrality-based information. Moreover, the vertices selection has been done blindly (greedy) in the existing methods.Methods: In this paper, a comprehensive algorithm entitled CSRW stands for centrality, and a semantic-based random walk is proposed for the network embedding process based on the main criteria of the centrality concept as well as the semantic impact of the textual information of each vertex and considering the impact of neighboring nodes. in CSRW, textual analysis based on the BTM topic modelling approach is investigated and the final display is performed using the Skip-Gram model in the network.Results: The conducted experiments have shown the robustness of the proposed method of this paper in comparison to other existing classical approaches such as DeepWalk, CARE, CONE, COANE, and DCB in terms of vertex classification, and link prediction. And in the criterion of link prediction in a Subgraph with ۵۰۰۰ members, an accuracy of ۰.۹۱ has been reached for the criterion of closeness centrality and is better than other methods.Conclusion: The CSRW algorithm is scalable and has achieved higher accuracy on larger datasets.

کلمات کلیدی:

BTM Topic Modelling, Centrality Criteria, Deep Learning, Network Embedding, Social Network Analysis