

Community Detection on Social Network with Complex Attributes

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Abstract: Observing a social network with the connection between nodes and the attributes of the nodes, how to identify the community label for each node? With the development of the theory in social network, this problem is of growing interest.

Currently, most methods assume the dimension of the attributes is not large. With the development of technology, the attributes associated with one node may be high dimensional, and only a few of them are related with the community label of interest. It will hurt the efficiency of the previous algorithms.

We proposed a new community detection method for the node with attributes that is high dimensional and sparse. With the product of the adjacency matrix and the attribute matrix, we apply the attributed-SCORE algorithm, to get reasonable community detection results. We apply it to the statistician citation network with the abstract of each paper as the attribute.