Abstract

Social networks have become popular because they provide many services and advantages to its users like helping them to connect with new people, share content and share opinions with likeminded people. To conclude which new interactions between members are likely to occur in the near future? This problem defined as the link prediction problem. The traditional methods of link prediction are based on path features and graph features but few consider clustering information. So two link prediction methods based on spectral clustering using k-medoids and landmark are proposed. The first method uses k-medoids to cluster nodes of the graph based on eigenvectors that obtained from the normalized Laplacian matrix. While the second method selects a subset of data points as the landmarks and represents the original data points as the linear combinations of these landmarks. Experimental results demonstrate that our methods achieve high accuracy compared with LSk-means method (Link prediction using Spectral clustering by k-means).
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Index Terms

Computer Science Information Systems

Keywords

Social networks, link prediction, spectral clustering, landmark, k-medoids, sparse coding