A new Pre-processing Strategy for Improving Community Detection Algorithms

Abstract

In the study of complex networks, a network is said to have community structure if it divides naturally into groups of nodes with dense connections within groups and only sparser connections between them. Detecting communities from complex networks has attracted attention of researchers in a wide range of research areas, from biology to sociology and computer science. In this paper, we introduce a new approach to make existing community detection algorithms execute with better results. Our method enhancing community detection algorithms by applying a pre-processing step that exploits betweenness for nodes and edges, to maps unweighted graph onto a weighted graph. It has been tested in conjunction with four algorithms, namely the Louvain method, SOM algorithm, VOS clustering, and Danon algorithm. Experimental results show that our edge weighting strategies raises modularity for existing algorithms.
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- V. Krebs, [http://www. orgnet. com/].

Index Terms

Computer Science Algorithms

Keywords

Social Network Community detection Centrality measures Modularity function.
A new Pre-processing Strategy for Improving Community Detection Algorithms