

Evolutionary algorithm and modularity for detecting communities in networks

Authors

Saoud Bilal, Moussaoui Abdelouahab

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Description

Evolutionary algorithms are very used today to resolve problems in many fields. There are few community detection methods in networks based on evolutionary algorithms. In our paper, we develop a new approach of community detection in networks based on evolutionary algorithm. In this approach we use an evolutionary algorithm to find the first community structure that maximizes the modularity. After that we improve the community structure through merging communities to find the final community structure that has the high value of modularity. We provide a general framework for implementing our approach. Compared with the state of art algorithms, simulation results on computer-generated and real world networks reflect the effectiveness of our approach.