

Community Detection in Python

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April 10, 2019

Abstract

We will be examining the subdomain of graph mining known as community detection. Community detection aims to find community structure in larger networks. This can be viewed as either a graph partitioning problem, where a graph is repeatedly divided into subgraphs that are more and more similar, or a graph clustering problem, where we define a distance metric for community members and cluster in a way that minimizes the distance between nodes in a community and maximizes the distances between communities.

We will look at several measures for assessing cluster quality, see some motivating examples for using community detection algorithms, and look at three different methods of finding community structure in graphs. We will look at how these methods perform on a random graph with synthetic community structure.