

Lab assignment 07

Question:

Let's consider a real-world dataset: Facebook Ego Networks!

Data Set:

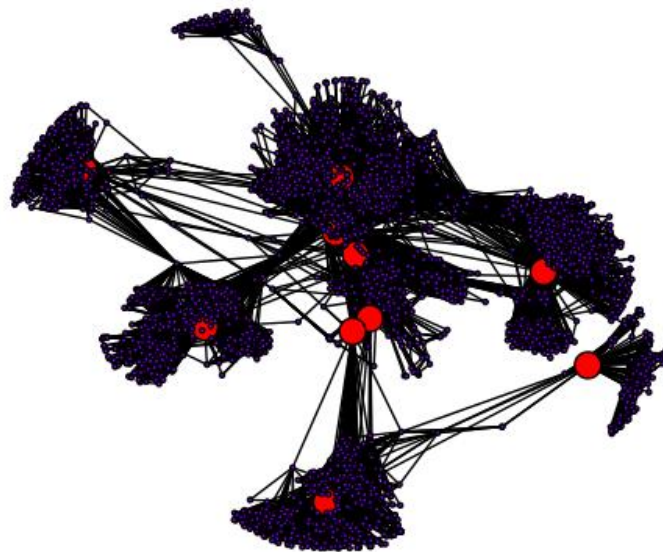
<https://snap.stanford.edu/data/egonets-Facebook.html>

This Facebook combined ego networks datasets contains the aggregated network of ten individuals' Facebook friends list. In this dataset, the vertices represent individuals on Facebook, and an edge between two users means they are Facebook friends. Each ego-network was created by starting with a Facebook user and then mining all of his Facebook friends. The ego-networks are then aggregated by identifying individuals who appear in multiple ego-networks.

Problem From this data set, solve the following problems of social network analysis using the Python library NetworkX And also visualize these two statistics using Gephi Tool.

1. Parallel Betweenness:

How do we determine who is the most "important" individual in the network. Well, that depends on the definition of "important". One way to define "importance" is the individual's betweenness centrality. The betweenness centrality is a measure of how many shortest paths pass through a particular vertex. The shortest paths that pass through the vertex, the more central the vertex is to the network.



Community Detection

Facebook friends probably come from different aspects of your life: Some are your friends from college, others are your co-workers, and maybe some old friends from your hometown. Because your friends can be broken down into different groups like this, you may wonder if we could identify these different *communities* in your social network. Using *community detection* algorithms, we can break down a social network into different potentially overlapping communities.

