Homework #6: QUESTIONS for TEXT Chapter 10 Twitter

By Yang

1. 
   (a) Research Question 1: 
       Find out the important roles in egocentric networks, like node with highest Betweenness Centrality or Eigenvector Centrality.
   
   (b) Research Question 2: 
       What are the sub groups in the network?
   
   (c) Research Question 3: 
       What positions are the people tweet most hold in the network?

2.

First we calculate the In-Degree and Out-Degree metrics, and sum up them for every vertex. Then filter the sum<=1 ones, for they are less value in this network. Map the vertices color to Eigenvector Centrality and Size to
Betweenness Centrality. Let the ego’s eigenvector and betweenness centrality be 0.

(a) Vertices with bigger size. For the big ones, they have larger betweenness centrality, thus have more information flows. These are the people that more likely to retweet and convey information from author to other people.

Vertices with red colors are the ones holding higher eigenvector centrality, saying that they are paid more attention by others. These people always be the receivers of @replies.

(b) There’re naturally forming two clusters. One cluster vertices have higher betweenness centrality, that’s vlad43210’s friends. And one has higher eigenvector centrality is vlad’s colleagues.

(c)

Map vertices colors to followers, size to tweets numbers. We can tell that bigger ones are people that tweet more, and the only green one has a larger number of followers, making him an important role of spreading news or sharings. Furthermore we may analyze the retweet of the followers to indentify the importance value of the green ego.
3. Based on the assumption that users with more followers are more popular and users tweets more are more active. Then we map the vertices size to followers, color to Tweets.

The center one, ihg_deals has relatively big followers, but less tweets. However the big red one, donnak4 is a follower of ihg_deals. And donnak4 has much more followers then any other vertex in the network. When I check the tweet column, I find out that donnak4 is retweet ihg_deals’s tweet, making the news spreading larger.

And we also find out there’re some green ones connect to ihg_deals. These green ones are the people tweets more. But by telling form the graph, they do not have large followers. And due to their large tweets, it’s possible that the retweet of ihg_deals’s tweet is easily get cover by new tweets. Thus I think they seem quite less important in this network.

4.

(a) @replies and @mentions
@replies indicate the person been replied to is more important. Usually we can find out celebrity holds such an network that a lot of people @replies him/her. And mutual @replies indicates that two people share a strong tie, like friends talking in real lfe.
(b) Hashtags
   This can represent a topic, or event in real life. By looking the people whose tweets contains the hashtag, we can tell their maybe some interactions between them. By looking how the same hashtag spread through @replies and retweet, we can find out how people are connected and analyze their relationships.

(c) Retweeting
   This is like quoting and explains how news could spread through the network.
   Also we may find out how retweeting goes from one another to identify important value promotion.

(d) Twitter friend and follower
   A’s follower we mean the people A followed, and A’s friends we mean the people that follow A. The friend concept is different to real life in that the twitter friend is nonreciprocal.

(e) Gossip
   Gossip is contagious and can easily spread through a network. If the content of what people retweeting is gossip news, we can find out how gossip is spreading and what are key people to broaden it.