1. Name a number of research questions that can be answered about individual Twitter networks using SNA. Explain each question a bit and why it's interesting.

Answer:

(a) Who is the important individual and who is not so important in the network? To figure out the importance of people in the network can let me know who is the one I should pay attention to and keep along with. Also I can find those spammers through checking the eigenvector centrality. By inspecting every user's importance in the network, I can decide who I should continue to follow and who I need to release the connection with.

(b) Is there any user plays a role of “information broker”? Only those who have high betweenness centrality can be deemed as an information broker. By examining the betweenness centrality we can find effective information passers who have high betweenness centrality and redundant information generators who have low betweenness centrality.

(c) Are there types of clusters that occur? Maybe I can find some interesting clusters in the network. By researching the clusters in network we can find different user groups.

2. Write several paragraphs describing what you found in your ego network. Begin with the research questions you want to answer. Describe briefly the processes you used including any filtering. Finally, describe your results in text and with appropriate figures.

Answer:

Due to Twitter's rate limits and the huge number connections some vertices have, I choose “limit 500 people” when I was importing the data from Twitter user's network. Figure 1 shows my twitter network after the data was imported into NodeXL.
From Figure 1 we can see that every node is connected and there are many heavily connected vertexes.

For clearly display the network, I filtered the vertexes which have total degree lower than 26, Figure 2 shows the network after filtering.
I set the size of vertex with betweenness centrality and the opacity of vertex with eigenvector centrality. Figure 3 shows what happened after the configuration. The biggest and darkest vertex is myself.

There are some wired situations. Almost every other vertex is in same size which indicates that they have very same betweenness centrality. To the eigenvector centrality, they don’t have very big differences. Another thing is that there is only one cluster in this network.

After a deep consideration about this situation I think the main reason is that those people I’m following are same kind of people—the dissenters of Chinese government. They use Twitter to propagate sensitive information which are not allowed to appear in Chinese websites. That is why there is only one cluster and all vertexes are well connected.

3. Section 10.5.2 describes an analysis of search using “Black Friday”. Following the case study in the text, download and analyze this topic with the networks for mentions, replies-to and follows, etc. Write several paragraphs describing what your found. Are they similar to the analysis of the text? Again, be clear about what questions you are answering with your analysis.

Answer:

I tried whole day to collect the data from Twitter with the search phrase “Black Friday”, unfortunately, Figure 4 is the best result I’ve got until now, 2:52 AM. Greener vertices have more tweets, larger vertices have more followers. From the figure we can see @famous24 has the biggest centrality and eigenvector centrality. But it is not very big and green, other bigger and greener vertices are connecting it. So even if @famous24 itself does not have many followers and tweets, it still can spread out the “Black Friday” promotions very
farther. Although the number of vertices in this figure is much smaller than which in textbook, they are still similar with each other.

Again, there is too few data to do a deeper analysis, but we still can learn that you do not need a lot of followers or a lot of tweets to reach a wide audience when you want to be a good promoter or ads spreader.

4. Discuss what a “conversation” is in Twitter versus real-life. Relate it to the following concepts: (a) @replies and @ mentions; (b) hashtags; (c) retweeting; (d) Twitter friend and follower; (e) gossip.

In real-life conversations, people must talk to other specific people or groups (like in a meeting) not just speaking words driftlessly. In Twitter, this kind of conversation is achieved by the uses of @reply. Using @replies in a conversation means you are speaking to a specific person not just soliloquizing. Here, the @replies and @mentions are different, @replies is included in @mentions, @mentions could be @replies but not all @mentions
are @replies. Just like in real-life talk, you may mention someone’s name in the conversation but are not talking to the person.

In real-world conversation, people hard to realize what the theme of the talk if they don’t join in the conversation and keep listening. However, Twitter provides a mechanism called hashtag to help users identify the conversation as a descriptor. Twitter users can find their desired conversations by hashtags.

In real-life conversations, when we heard some important information from one of our friends, it is very possible that we will tell this information to another friend of ours, and this friend may tell this news to his/her friends, so that the information are spread out. In Twitter conversation, users can use retweeting to transfer or propagate information to other.

One of the primary differences between Twitter and real-life conversation is that, there are friend and follower in Twitter. Those people whom you are following are friends, and those people who subscribe to and receive your messages are your followers. So the conversation in Twitter can be unidirectional because your messages can be seen by your followers but you cannot see your followers’ messages unless you follow them too. Alike, when you are following someone, you can receive his/her messages but your messages will not be noticed.

One important subject in our real-life conversation is gossips. People keep talking about that and disseminating gossips as far as they can. By using Twitter, the speed of propagating gossips is dramatically enhanced. Because the messages people sent can be accepted by a lot of followers and those followers may transmit the messages immediately through retweeting or retyping, so the gossips can be widely spread out in minutes. From this case we can know that Twitter is a good platform for the transmission of information.