

## Analysis of News Channels – Featured and Recommended Videos

Shivam Mathur

Fox News is an American conservative cable television news channel. The Young Turks (TYT) is a liberal, left-wing news and opinion show on YouTube that additionally appears on selected television channels in the United States.

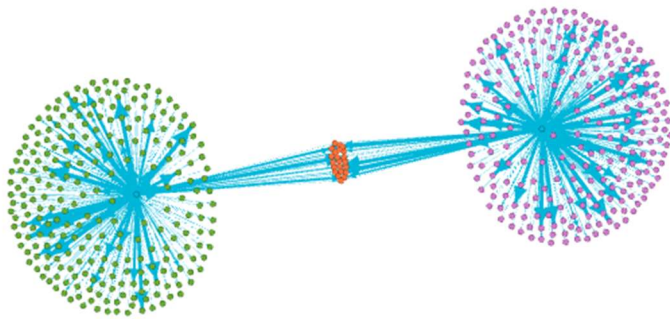
Both featured & recommended videos from The Young Turks and Fox News channels are web scrapped. Using Gephi, a graph is visualized with the central nodes being the two channels and the other nodes being the featured and recommended videos. The links show the association between two particular nodes (videos)!

### Degrees of the Graph:

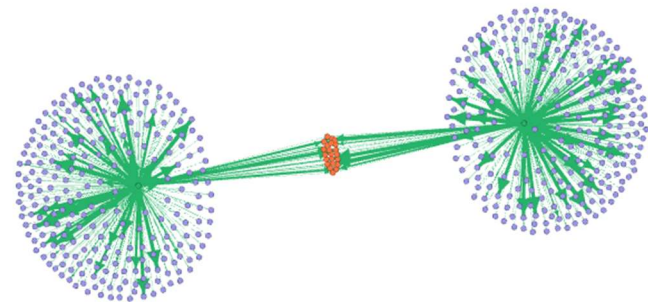
In-degree: It refers to the number of edges that come to a specific node from other node(s).

Out-degree: refers to the number of edges going out of a specific node to other node(s).

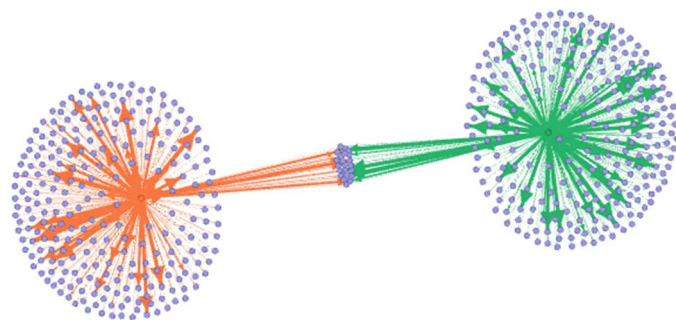
Degree: It refers to the total number edges coming or leaving a particular node, i.e. the sum of the in-degree and out-degree.



Degree	colour	No.of nodes	Percentage
1	Purple	508	95.49
2	Green	22	4.14
274	Orange	1	0.19
278	Blue	1	0.19



In-Degree	colour	No.of nodes	Percentage
1	Purple	508	95.49
2	Orange	22	4.14
0	Green	2	0.38



Out-Degree	colour	No.of nodes	Percentage
0	Purple	530	99.62
274	Orange	1	0.19
278	Green	1	0.19

### **Making Sense out of the above numbers:**

There are two clusters in the visualized graph, the centre node of each cluster is the respective channel node – one for Fox news and the other for The Young Turks. Since they are channels, the videos (nodes) belonging to them will be connected directly to them. Thus their in-degree will be zero, but their out-degree will be the number of video URLs pertaining to those channels.

Now, the videos that are only associated with one channel, they will have an in-degree of one, and obviously an out-degree of zero.

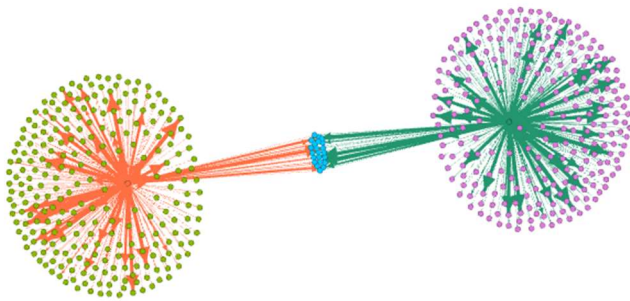
Lastly, there are certain shared video URLs (nodes) that are shared between both the channels. They will have an in-degree of 2, since they will be connected directly to both channel nodes.

### **Calculating number of nodes (videos) are associated to both channels:**

The in-degree of these nodes (videos) will be = 2

So, for an in-degree = 2, Gephi gives us 4.14% of nodes. This corresponds to 22 nodes ( $4.14\% \text{ of } 532 = 22$ )

### **Undirected Closeness Centrality for the network, through "Average Path Length:**



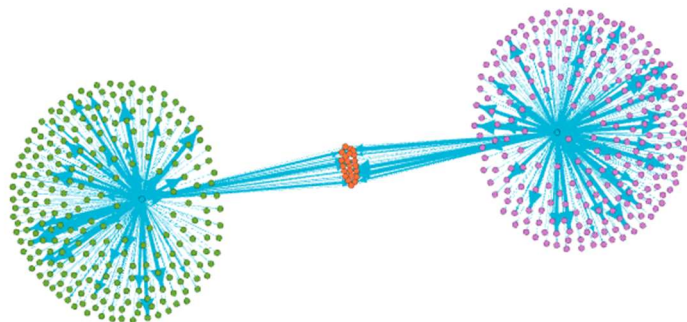
Undirected Closeness Centrality	colour	No. of nodes	Percentage
0.339	Purple	256	48.12
0.337	Light Green	252	47.37
0.500	Blue	22	4.14
0.508	Orange	1	0.19
0.512	Dark Green	1	0.19

The closeness centrality refers to the average distance from a given starting node to all the other nodes in the network. The Highest values are for the two nodes which are the centres of the clusters for both the channels. This is due to the fact that although there are many directly connected nodes (which are links to the particular channel node), the criteria is undirected. This implies that so there are almost equally as many indirect nodes (distance of more than one) connected to the opposite channel cluster side.

The lowest values (0.339 and 0.337) are pertaining to the nodes which are just video URLs of one channel, and not related to the other channel. They may be quite far away from the nodes pertaining to the opposite channel but this distance is compensated by the direct connection of these nodes to their centre cluster node. Hence they end up having low values.

The last group is between these two (0.500 - 22 elements). Video links which share commonality with the channels are located in the centre, and hence their distance values will neither be large, nor be low.

### **PageRank**



Page Rank	colour	No. of nodes	Percentage
0.00187944	Purple	256	48.12
0.00187952	Green	252	47.37
0.00188525	Orange	22	4.14
0.00187371	Blue	1	0.19

A total of 4 groups are observed.

Page rank refers to the number of edges (edges) directed to a particular node (in this case, a video URL).

It is very useful since if the page rank of the node is high, then that video URL is visited the maximum from other videos and hence will help to identify most popular video link in the dataset.