Notes on using Gephi for Spectral Graph Visualization

The following steps are same for both normalized and unnormalized version. The data to be loaded in Gephi for visualizing unnormalized version will be stored in files – **nodes.csv and edges.csv** – while for the normalized version, it will be stored in files – **norm_nodes.csv and norm_edges.csv**. All these 4 files will be generated by Matlab code and stored at same location where the Matlab file resides.

Step 1. Start Gephi and select New Project

Step 2. Select "Data Laboratory" tab

Step 3. Use "Import Spreadsheet" button to load nodes and edges data.

Step 4. Once data is available, select "Overview" tab. A gray colored graph must be visible.

Step 5. On the top left pane, make sure that "Partition" is selected and "Nodes" tab is selected. Press the green refresh button. It should fill up the drop down. From the drop down, select "Color". Click Apply. This will turn the gray nodes in the graph into colored.

Step 6. In the layout, select "ForceAtlas2". In the options below, check "Prevent Overlap". Select Run. This run takes about 45-60 secs to finish. Once the nodes in graph have settled, select another layout - "Expansion". Change the value of scale to 3.5. Select Run. This will stretch the graph and remove cluttered look.

Step 7. Now, select "Preview" tab from top of window. This will open a preview of graph and a left pane for various options to preview. In the left pane make following changes to each section.

Step 7a. In Node section, change the value as follows:

1. Border Width: 30
2. Border Color: Parent

Step 7b. In Node Labels section, change the values as follows:

1. Check Show Node Labels
2. Press button in Font row and make it bold and increase size to 14
3. Check Proportional size (if not checked) and Check Shorten Label

Step 7c. In Edges section, change the values as follows:

1. Check Show Edges
2. Uncheck Curved

Step 8. [Optional] To see it bigger, the graph can be exported to SVG/PDF/PNG by clicking on bottom left Export option. It can also be seen in full screen using the VIEW option on the top Menu. To look at other version (normalized or unnormalized), start New Project and repeat above steps