Facebook Network Analysis Using Gephi

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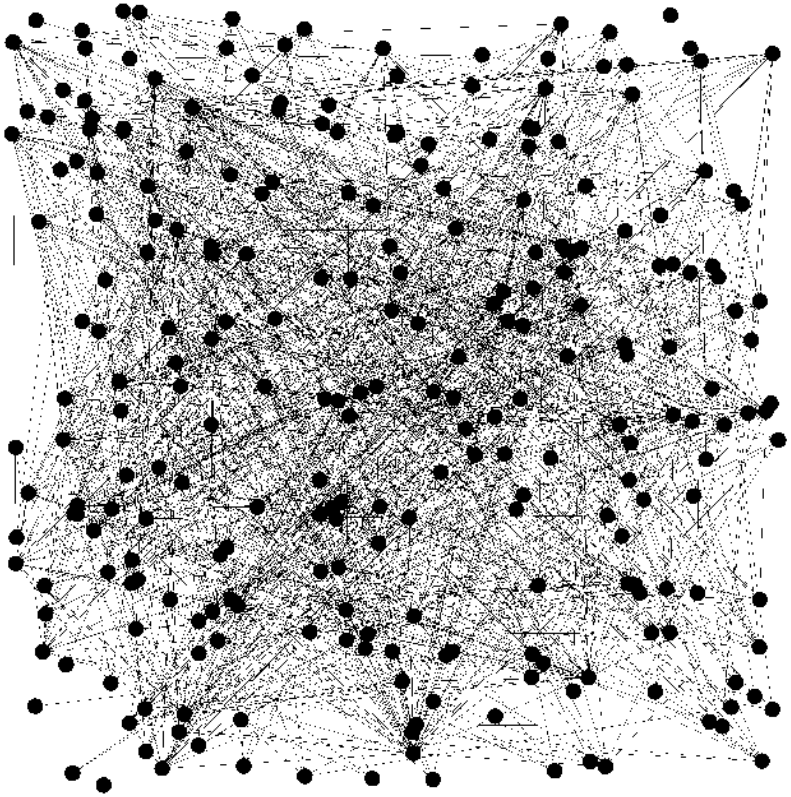
Netvizz

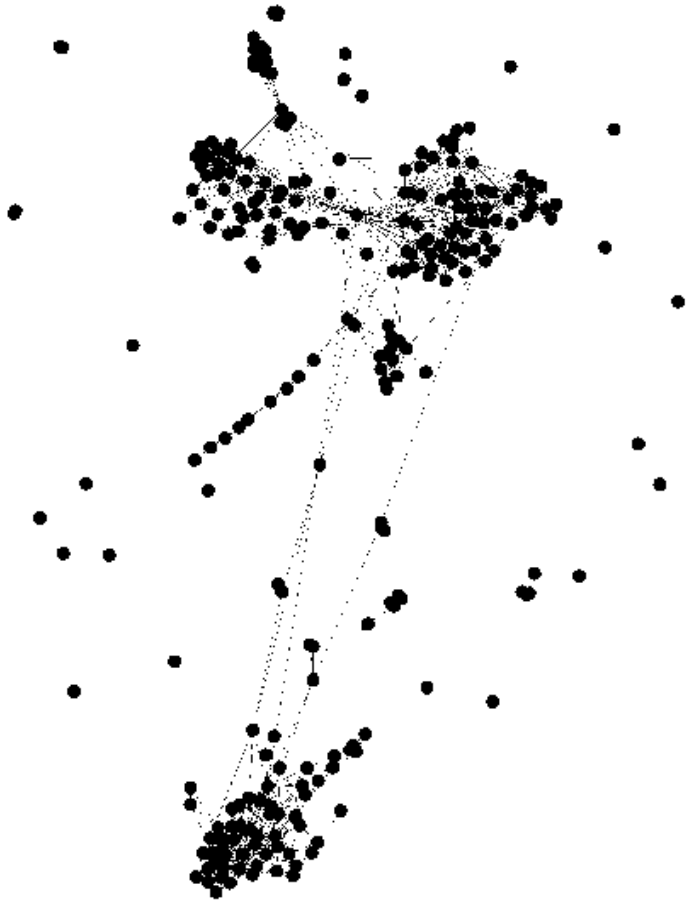
- Sign into your Facebook account
- Search for "netvizz" application
- Choose parameters you would like included in the data (e.g., gender, wall posts count, etc.)
- Analyze either your personal friend network [OR] one of your groups listed at the bottom
- Wait for netvizz to create file and download (right click, save as)

1. Gephi: Open



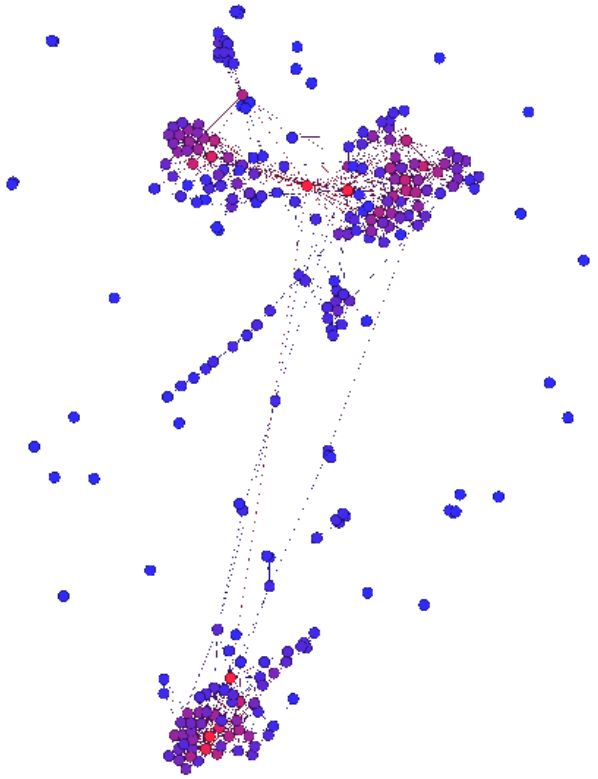
- From the **File** menu, select **Open** and then select the .gdf file you saved from Netvizz
- At first it sort of looks like a big hairball, so we'll change the layout to make some sense of these connections

2. Gephi: Layout



- From the **Layout** module on the left side, choose **Force Atlas** from the dropdown menu, then click **Run**
  - → Force Atlas makes the connected nodes attracted to each other and pushes the unconnected nodes apart to create clusters of connections
- Click **Stop** when it seems as if you have some distinct clusters of nodes

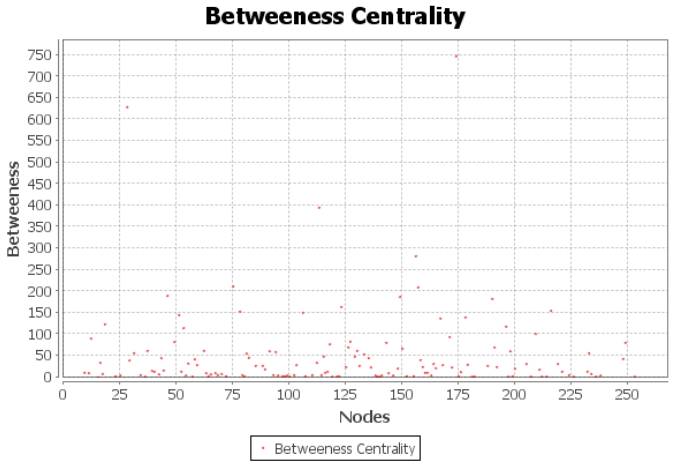
3. Gephi: Ranking (Degree)

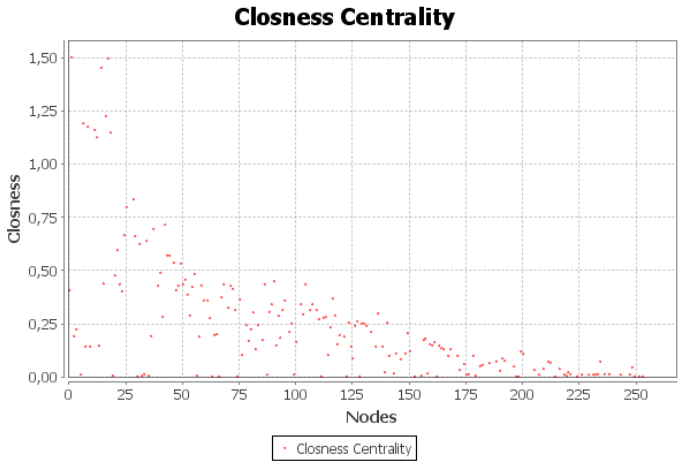


- Choose the **Ranking** tab in the top left module and choose **Degree** from the drop-down menu
  - → Degree = number of connections
- Hover your mouse over the gradient bar, then double click on each triangle to choose a color for each side of the "range"
  - → Try to use a bright colors for the highest degree so it's easy to see who's the most connected
- Click **Apply** to see the gradient applied

Tip: You can click the little "Table" icon in the bottom left of the ranking tab then click **Apply** to see a table of degree figures for your nodes

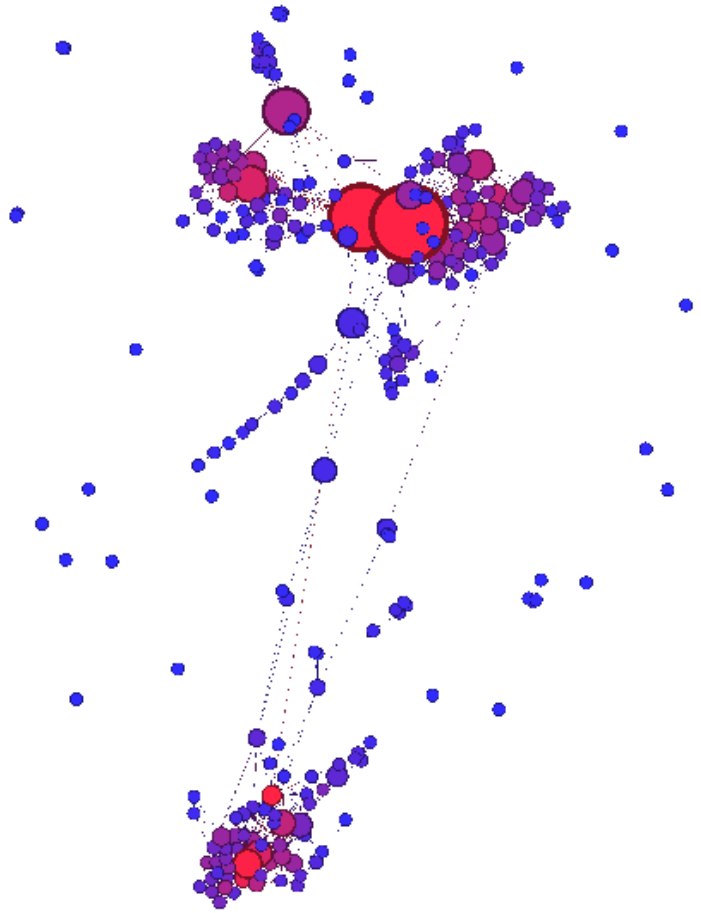
4. Gephi: Statistics (Betweeness)





- Click the **Statistics** tab in the top right module
- Click **Run** next to **Average Path Length**
  - Choose **Directed** from the pop up menu
- Click **Close** when the graph distance reports pops up (unless you want to save them)

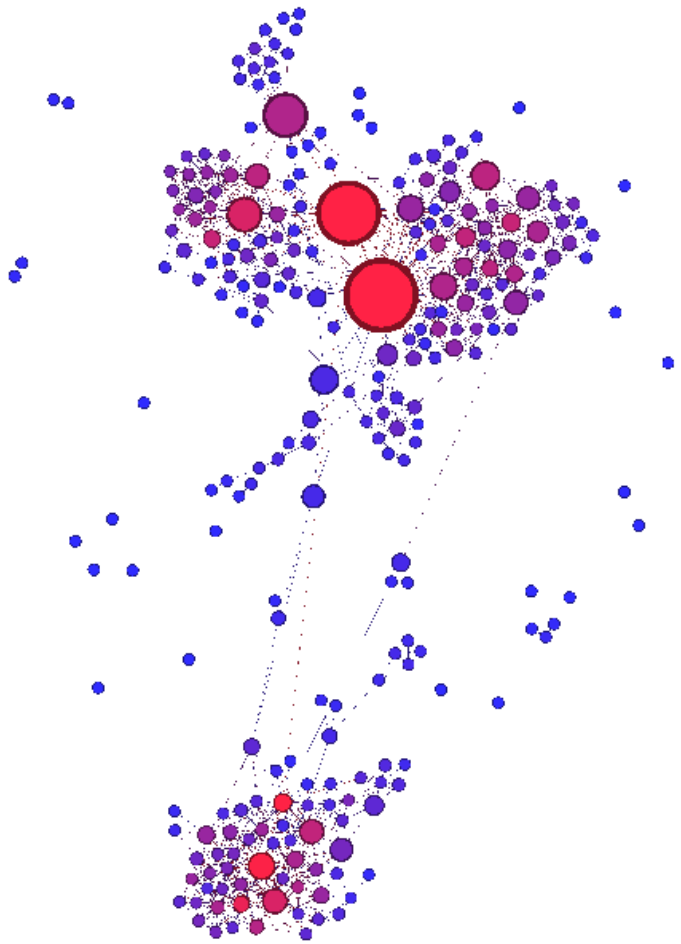
5. Gephi: Rank (Betweeness)



- Return to **Ranking** in the top left module, and click **Choose a rank parameter** from the drop-down (this resets the options)
- Then choose **Betweeness Centrality** from the same drop-down menu
- Click on the icon for **Size** instead of color this time (icons above drop-down bar)
- Set **Min Size** to **10** and **Max Size** to **50**

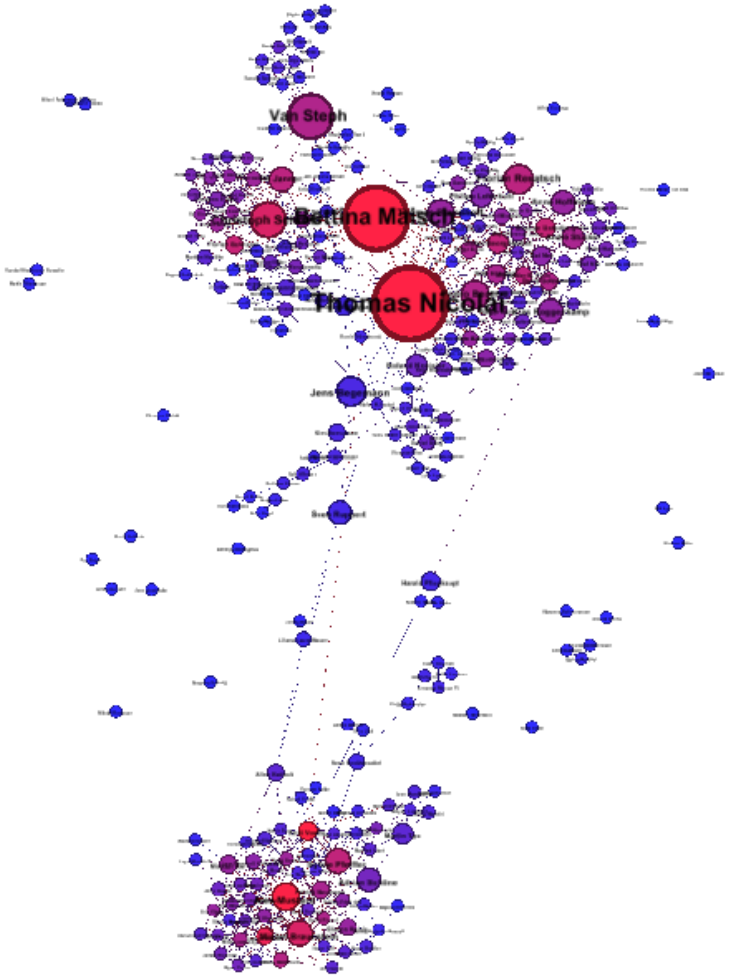
  → Play around with these numbers depending on the nature of your network
- Click **Apply** to change the node sizes according to their betweeness

6. Gephi: Layout (Betweeness)



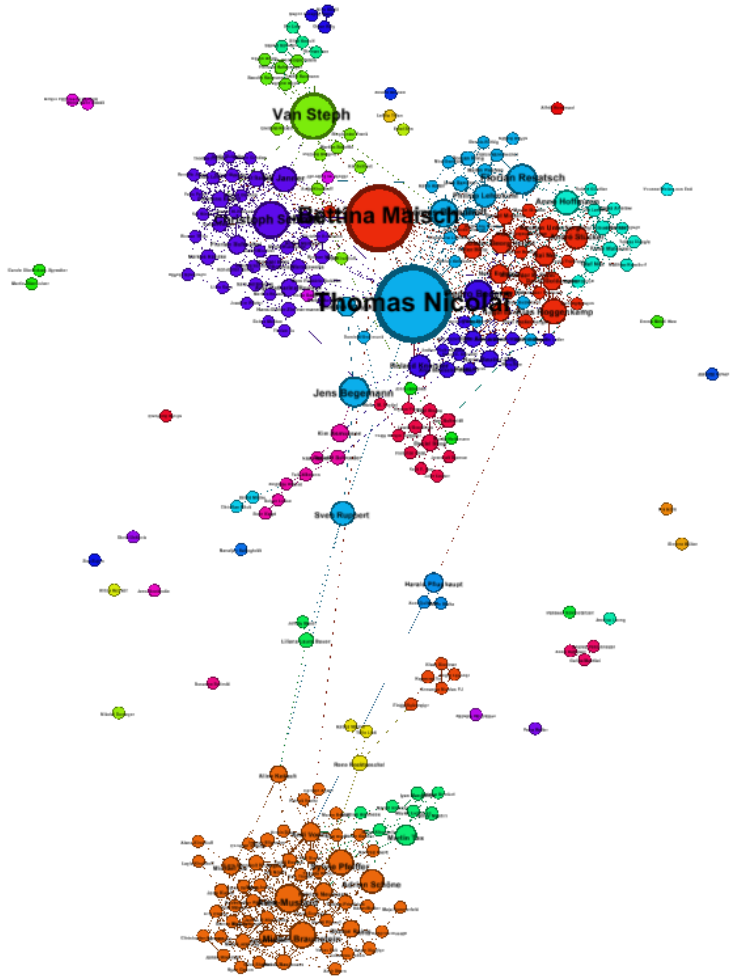
- To keep the larger nodes from overlapping smaller ones, go to the **Layout** tab in the left module and check the **Adjust by sizes** box
- Click **Run** for just a moment (then **Stop**) so the modules will spread out accordingly

7. Gephi: Labels



- Click the bold black **T** in the toolbar at the bottom of the window to turn labels on
- Click the black letter **A** in the same toolbar to select the **Size Mode** for the labels, and choose the **Node Size** option
- Use the **slider** (on the right) to adjust the overall label size to your liking
- You can also change the font style by clicking next to the slider (Default for me was Arial Bold)

8. Gephi: Community Detection

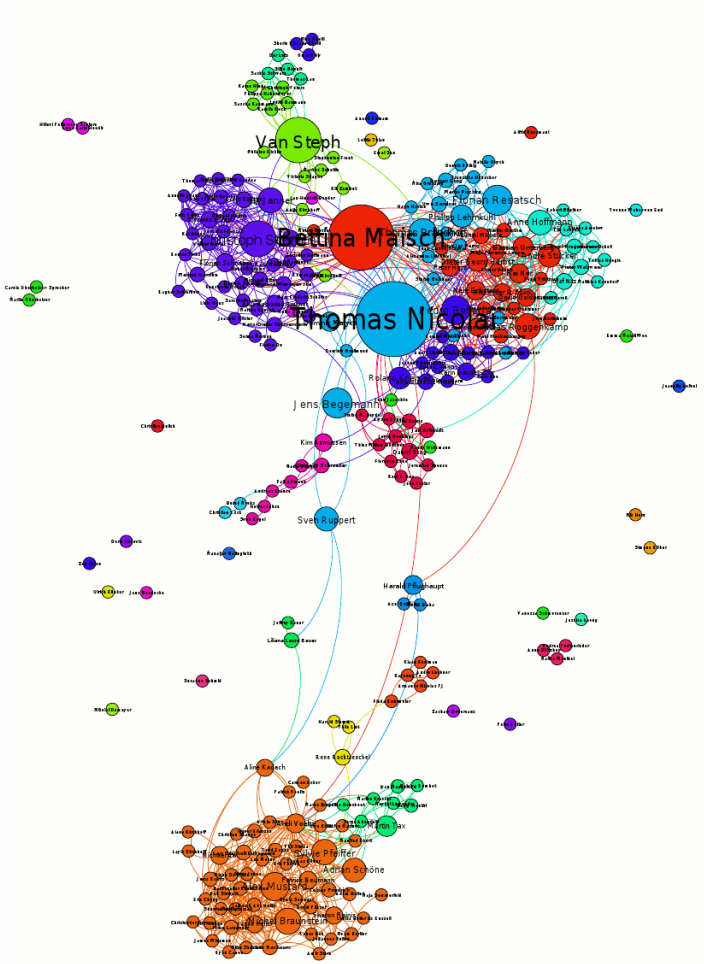


- Go back to the **Statistics** tab on the right and click **Run** next to **Modularity**
  - Check **Randomize** on the popup and click **OK**
  - → This creates a modularity class value for each node, which we'll use to colorize the communities
- Go to the **Partition** tab in the top left module and click **Refresh arrows** to populate list
- Choose **Modularity Class** from the dropdown menu
  - You can right-click on this box and click **Randomize Colors** if you don't like the ones that are there
- Click **Apply** to colorize the detected communities

9. Gephi: Filter

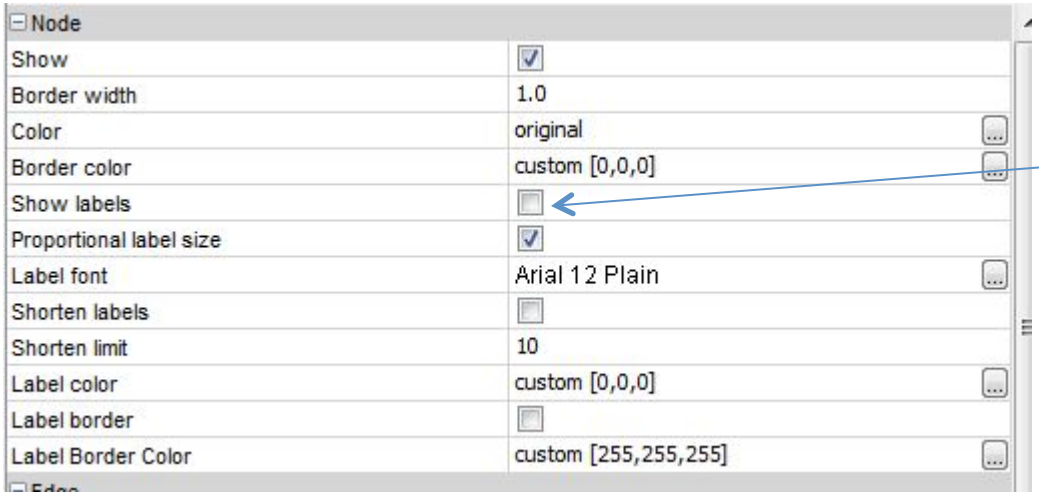
- Go to **Filters** in the top right module and open the **Topology** folder
- Drag the **Degree Range** filter to the box below ("Drag filter here")
- Click on Degree Range to open the **Parameters**, then edit the degree range settings by clicking on the **"0"** and changing it according to your network
  - This option basically removes the "leaves" in the network that are not connected to many other nodes
  - Since Lars has a pretty connected network, we set the lower range to 5, meaning that it hides all nodes with less than 5 connections
- Click **Filter** to apply

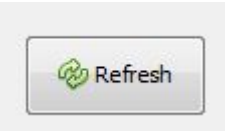
10. Gephi: Label Adjust



- The Gephi folks recommended to run a final layout adjustment before the export that makes it easier to read the labels. There are two options:
- "Label Adjust" works much the same as the size adjustment, moving the nodes so the labels are readable
- There is an additional plugin you can add called "Noverlap" that also helps to solve the clutter problem (See result on final page)

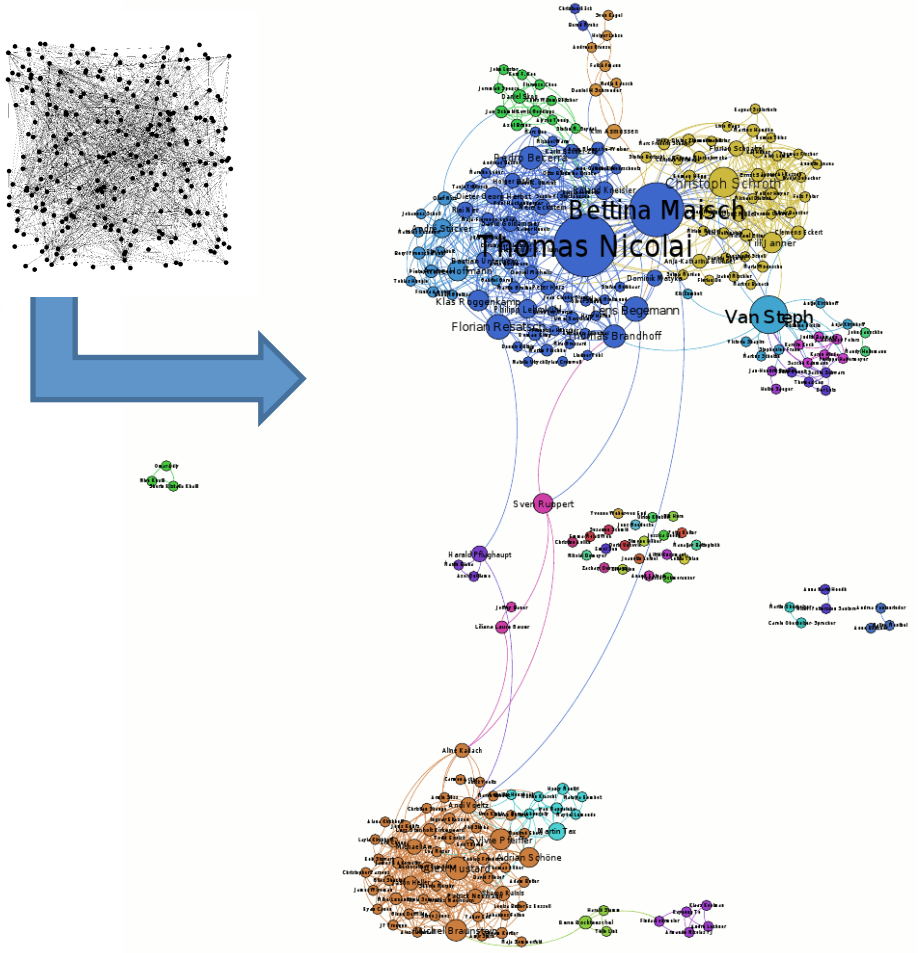
11. Gephi: Preview





- At the very top left, click on the **Preview** tab
- Under **Node**, check the box that says **Show Labels**.
- Click **Refresh** at the bottom, then set the **Label Font** under the **Nodes** section accordingly
- Play around with other Preview options until you like the graph you're looking at! Don't forget to **Refresh** after changes.

12. Gephi: Export!

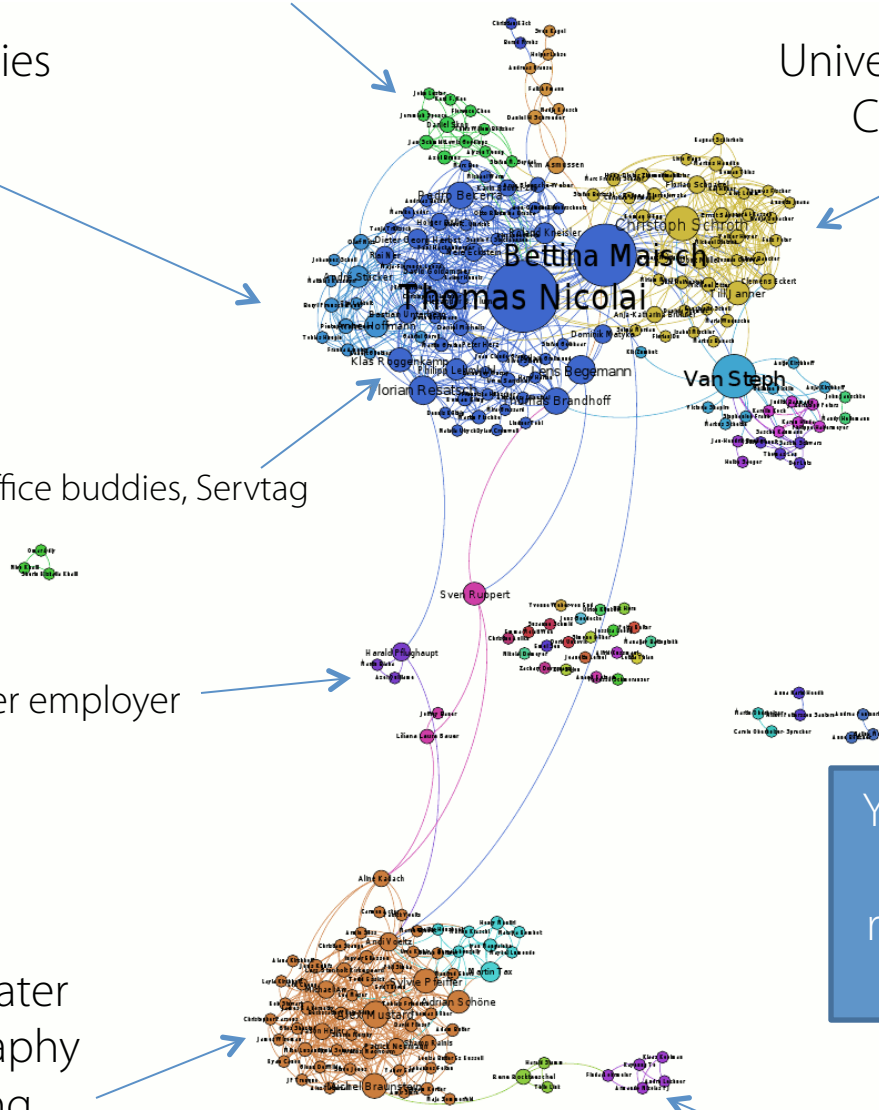


- Choose to export (at the bottom left) in either SVG or PDF, and voila! You have visualized your Facebook network community clusters!

Research partners

Berlin communities

University St. Gallen Community



Our office buddies, Servtag

Former employer

Underwater photography & diving community

You can see Lars' various community clusters represented very clearly in this viz.

Friends met in Singapore