

Gephi: a network visualisation tool

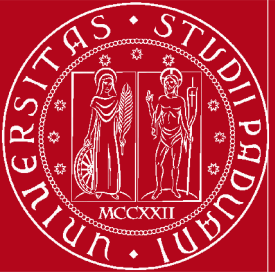


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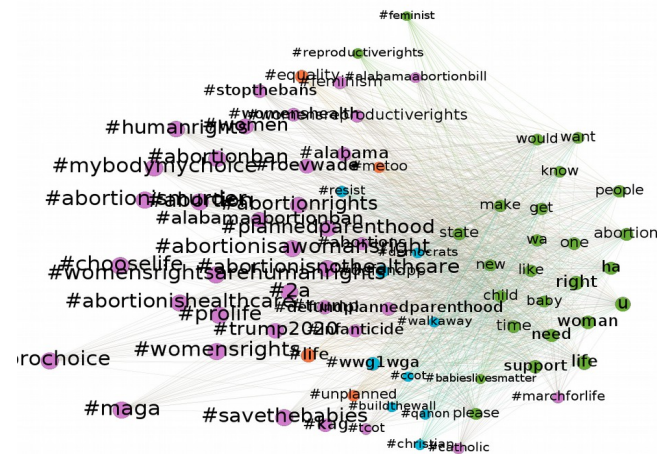
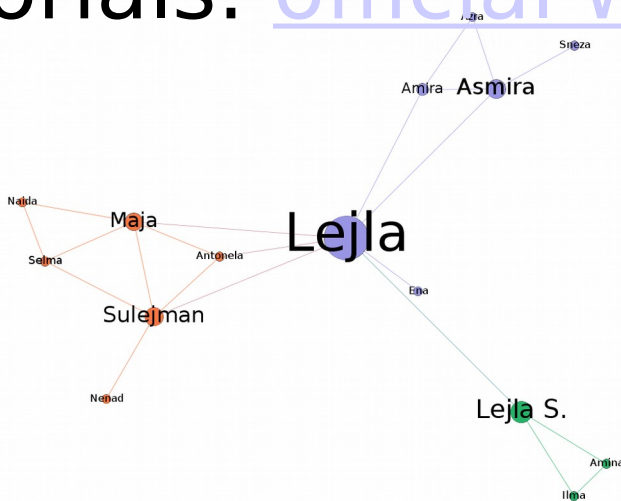
Overview

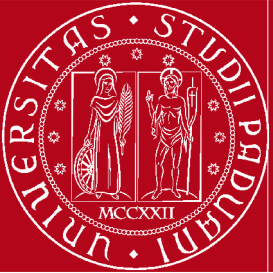
1. What is Gephi?
2. Gephi download and installation
3. Gephi network visualization demo



What is Gephi?

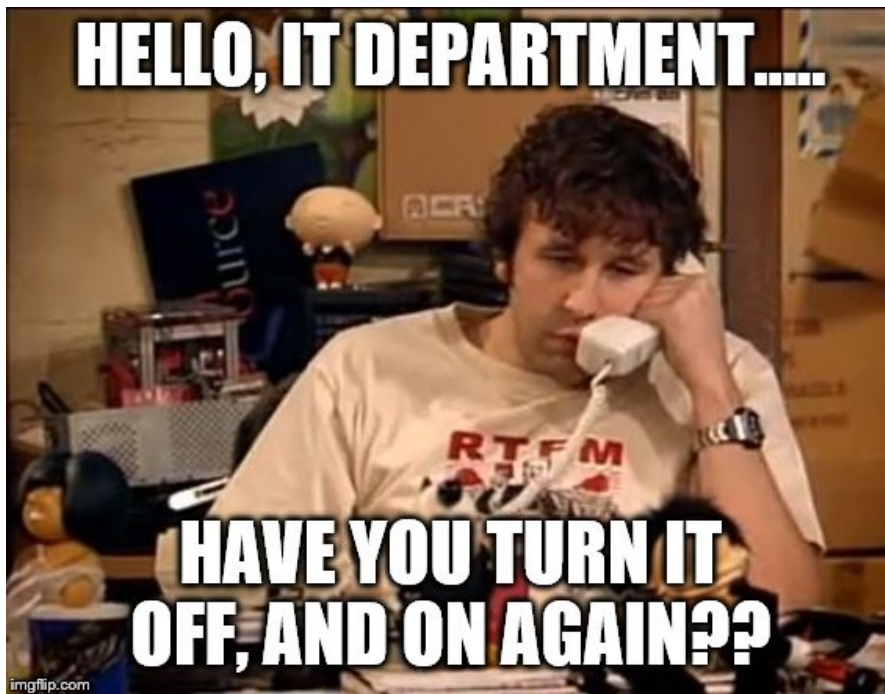
- Gephi is an open-source software for visualization of graphs and networks
- Offers built-in network analysis with few simple clicks
- For more information, examples and tutorials: [official website](#)





Gephi instalation

- pretty straightfoward
- if you run into issues contact me :)

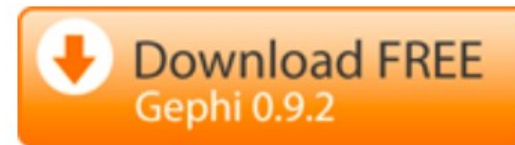


The Open Graph Viz Platform

Gephi is the leading visualization and exploration software for all kinds of graphs and networks. Gephi is open-source and free.

Runs on Windows, Mac OS X and Linux.

[Learn More on Gephi Platform »](#)



[Release Notes](#) | [System Requirements](#)

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Gephi nw visualization demo

What we'll do:

- start from a (small) friendship network
- import nodes and edges
- adjust graph layout
- set node color according to degree
- set node size according to PageRank
- detect communities
- set node color according to community
- export graph image
- visualize communities in bigger networks



Gephi nw visualization demo

The screenshot displays the Gephi software interface. The 'File' menu is open, and the 'Import spreadsheet...' option is highlighted in orange. A red arrow points from a text box containing the text 'Go to Import spreadsheet...' to the 'Import spreadsheet...' menu item. The main workspace is currently empty, showing '<No Properties>' and a 'Preview' window. The bottom status bar includes 'Preview ratio: 100%', 'Export: SVG/PDF/PNG', and a 'Refresh' button.



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Preview Settings x

Presets

Settings Manage renderers

<No Properties>

Preview ratio: 100%

Export: SVG/PDF/PNG

Refresh

Background Reset zoom - +

Open

Look In: Documents

- Projects
- Zoom
- edges.csv
- edges.ods
- node...
- nodes.ods

File Name: nodes.csv

Files of Type: All Files

OK Cancel

Select your nodelist Excel spreadsheet.



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:33

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Preview Settings x Preview x

Presets

Settings Manage renderers

<No Properties>

Preview ratio: 100%

Export: SVG/PDF/PNG

Background Reset zoom - +

Spreadsheet (CSV)...

Steps

1. General CSV options
2. Import settings

General CSV options (1 of 2)

CSV file to import:
/home/malidzanko/Documents/nodes.csv

Separator: Import as: Charset:
:olon Nodes t... UTF-8

Preview:

id	Label
1	Lejla
2	Antonela
3	Sulejman
4	Maja
5	Lejla S.
6	Amina
7	Ilma

<Back Next > Finish Cancel Help



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:33

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Preview Settings x Preview x

Presets

Settings Manage renderers

<No Properties>

Preview ratio: 100%

Export: SVG/PDF/PNG Refresh

Background Reset zoom - +

Spreadsheet (CSV)...

Steps

1. General CSV options
2. **Import settings**

Import settings (2 of 2)

Time representation
Intervals

Imported columns:

- Id
- Label

<Back Next > **Finish** Cancel Help



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:33

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Preview Settings x Preview x

Presets

Settings Manage renderers

<No Properties>

Preview ratio: 100%

Export: SVG/PDF/PNG

Background Reset zoom

Pick undirected graph,
append to existing
workspace, no self-loops

Import report

Source: Stream ImporterSpreadsheetCSV

Issues Report

No issue found during import

Graph Type: Mixed

- Directed
- Undirected**
- Mixed

Edges merge strategy: Sum

Auto-scale

Create missing nodes

Self-loops

of Nodes: 15

of Edges: 0

Dynamic Graph: no

Dynamic Attributes: no

Multi Graph: no

New workspace

Append to existing workspace

OK Cancel



Gephi nw visualization demo

The screenshot displays the Gephi software interface. The 'File' menu is open, and the 'Import spreadsheet...' option is highlighted with a red arrow. A red box with the text 'Go to Import spreadsheet...' points to this menu item. The main workspace shows a graph with 15 nodes and 0 edges. The right sidebar shows the 'Context' panel with 'Nodes: 15' and 'Edges: 0'. The bottom left panel shows the 'Layout' section with 'ForceAtlas 2' selected. The bottom right panel shows the 'Statistics' section with various network metrics.

File Workspace View Tools Window Help

New Project Ctrl+Shift+N Preview

Open... Ctrl+O

Open Recent...

Close Project

Properties...

Import spreadsheet...

Import Database

Import...

Generate

Save Ctrl+S

Save As...

Export

Exit

Graph x

Dragging (Configure)

Go to Import spreadsheet...

Context x

Nodes: 15

Edges: 0

Directed Graph

Filters Statistics x

Settings

Network Overview

Average Degree Run ●

Avg. Weighted Degree Run ●

Network Diameter Run ●

Graph Density Run ●

HITS Run ●

Modularity Run ●

PageRank Run ●

Connected Components Run ●

Node Overview

Avg. Clustering Coefficient Run ●

Eigenvector Centrality Run ●

Edge Overview

Avg. Path Length Run ●

Dynamic

Nodes Run ●

Edges Run ●

Degree Run ●

Clustering Coefficient Run ●

Layout x

---Choose a layout

Run

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 100.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

LinLog mode

Prevent Overlap

Edge Weight Influence 1.0

ForceAtlas 2

Presets... Reset

Dialog.bold, 32

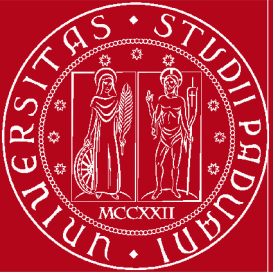


Gephi nw visualization demo

The screenshot shows the Gephi software interface with an 'Open' dialog box open. The dialog box is titled 'Open' and shows the 'Documents' folder. The file list includes 'Projects', 'Zoom', 'edge...', 'edges.ods', 'nodes.csv', and 'nodes.ods'. The 'edges.csv' file is selected and circled in red. Below the dialog box, a red box contains the text: 'Select your edgelist Excel spreadsheet.'

The Gephi interface includes the following panels:

- Appearance:** Nodes, Edges, Unique, Partition, Ranking, #c0c0c0, Apply.
- Layout:** ---Choose a layout, Run.
- Performance:** Tolerance (speed) 1.0, Approximate Repulsion , Approximation 1.2.
- Tuning:** Scaling 100.0, Stronger Gravity , Gravity 1.0.
- Behavior Alternatives:** Dissuade Hubs , LinLog mode , Prevent Overlap , Edge Weight Influence 1.0.
- ForceAtlas 2:** Presets... Reset.
- Graph:** Dragging (Configure).
- Context:** Nodes: 15, Edges: 0, Directed Graph.
- Filters Statistics:** Settings, Network Overview, Average Degree, Avg. Weighted Degree, Network Diameter, Graph Density, HITS, Modularity, PageRank, Connected Components, Node Overview, Avg. Clustering Coefficient, Eigenvector Centrality, Edge Overview, Avg. Path Length, Dynamic, # Nodes, # Edges, Degree, Clustering Coefficient.



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:34

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Partition Ranking

#c0c0c0

Layout x

---Choose a layout

Run

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 100.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

LinLog mode

Prevent Overlap

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

Spreadsheet (CSV)...

Steps

1. General CSV options
2. Import settings

General CSV options (1 of 2)

CSV file to import:

/home/malidzanko/Documents/edges.csv

Separator: :olon Import as: Edges t... Charset: UTF-8

Preview:

Source	Target	Label
1	2	Lejla - A...
1	3	Lejla - S...
1	4	Lejla - M...
1	5	Lejla - L...
1	11	Lejla - A...
1	12	Lejla - A...
1	15	Leila - Ena

< Back Next > Finish Cancel Help

Context x

Nodes: 15
Edges: 0
Directed Graph

Filters Statistics x

Settings

Network Overview

Average Degree Run

Avg. Weighted Degree Run

Network Diameter Run

Graph Density Run

HITS Run

Modularity Run

PageRank Run

Connected Components Run

Node Overview

Avg. Clustering Coefficient Run

Eigenvector Centrality Run

Edge Overview

Avg. Path Length Run

Dynamic

Nodes Run

Edges Run

Degree Run

Clustering Coefficient Run



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:34

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Partition Ranking

#c0c0c0

Apply

Layout x

---Choose a layout

Run

Performance

Tolerance (speed)	1.0
Approximate Repulsion	<input checked="" type="checkbox"/>
Approximation	1.2

Tuning

Scaling	100.0
Stronger Gravity	<input type="checkbox"/>
Gravity	1.0

Behavior Alternatives

Dissuade Hubs	<input type="checkbox"/>
LinLog mode	<input type="checkbox"/>
Prevent Overlap	<input checked="" type="checkbox"/>

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

Import report

Source: Stream ImporterSpreadsheetCSV

Issues Report

No issue found during import

Graph Type: Undirected

More options...

Auto-scale

Create missing nodes

Self-loops

Edges merge strategy: Sum

of Nodes: 15

of Edges: 22

Dynamic Graph: no

Dynamic Attributes: no

Multi Graph: no

New workspace

Append to existing workspace

OK Cancel

Context x

Nodes: 15

Edges: 0

Directed Graph

Filters Statistics x

Settings

Network Overview

Average Degree	Run
Avg. Weighted Degree	Run
Network Diameter	Run
Graph Density	Run
HITS	Run
Modularity	Run
PageRank	Run
Connected Components	Run

Node Overview

Avg. Clustering Coefficient	Run
Eigenvector Centrality	Run

Edge Overview

Avg. Path Length	Run
------------------	-----

Dynamic

# Nodes	Run
# Edges	Run
Degree	Run



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges | [Icons]

Unique Partition Ranking

#c0c0c0

Apply

Layout x

---Choose a layout

- Choose a layout
- Contraction
- Expansion
- Force Atlas
- ForceAtlas 2**
- Fruchterman Reingold
- Label Adjust
- Noverlap

Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15
Edges: 22
Undirected Graph

Filters Statistics x

Settings

Network Overview

- Average Degree Run
- Avg. Weighted Degree Run
- Network Diameter Run
- Graph Density Run
- HITS Run
- Modularity Run
- PageRank Run
- Connected Components Run

Node Overview

- Avg. Clustering Coefficient Run
- Eigenvector Centrality Run

Edge Overview

- Avg. Path Length Run

Dynamic

- # Nodes Run
- # Edges Run
- Degree Run
- Clustering Coefficient Run

Currently we have a random node layout

Choose ForceAtlas2



Gephi nw visualization demo

The screenshot displays the Gephi software interface with a network graph visualization in the center. The graph consists of 15 nodes and 22 edges, forming an undirected graph. The interface is divided into several panels:

- Appearance:** Shows node and edge styling options, including a color selection set to #c0c0c0.
- Layout:** The ForceAtlas 2 algorithm is selected. The 'Scaling' parameter is set to 1000.0, which is circled in red. A red arrow points to this value with a text box that reads: "Set scaling to 1000 (to force nodes to repulse each other, creating a better spaced graph)". The 'Run' button is also circled in red, with a tooltip that says "Run the layout algorithm".
- Context:** Displays network statistics: Nodes: 15, Edges: 22, Undirected Graph.
- Filters / Statistics:** A list of various network metrics with 'Run' buttons next to them, including:
 - Network Overview: Average Degree, Avg. Weighted Degree, Network Diameter, Graph Density, HITS, Modularity, PageRank, Connected Components.
 - Node Overview: Avg. Clustering Coefficient, Eigenvector Centrality.
 - Edge Overview: Avg. Path Length.
 - Dynamic: # Nodes, # Edges, Degree, Clustering Coefficient.



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges **Color**

Unique Partition Random

#c0c0c0

Apply

Layout x

ForceAtlas 2

Run

Threads number 3

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 1000.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

LinLog mode

Prevent Overlap

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15

Edges: 22

Undirected Graph

Filters Statistics x

Settings

Network Overview

Average Degree Run ●

Avg. Weighted Degree Run ●

Network Diameter Run ●

Graph Density Run ●

HITS Run ●

Modularity Run ●

PageRank Run ●

Connected Components Run ●

Node Overview

Avg. Clustering Coefficient Run ●

Eigenvector Centrality Run ●

Edge Overview

Avg. Path Length Run ●

Dynamic

Nodes Run ●

Edges Run ●

Degree Run ●

Clustering Coefficient Run ●

Now we have a nice layout. Let's color our nodes according to their node degree.

Pick Nodes, Color under the Appearance tab



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges Ranking

Unique Partition Ranking

---Choose an attribute

---Choose an attribute

Degree

Apply

Layout x

ForceAtlas 2

Run

Threads number 3

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 1000.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

LinLog mode

Prevent Overlap

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15

Edges: 22

Undirected Graph

Filters Statistics x

Settings

Network Overview

Average Degree Run ●

Avg. Weighted Degree Run ●

Network Diameter Run ●

Graph Density Run ●

HITS Run ●

Modularity Run ●

PageRank Run ●

Connected Components Run ●

Node Overview

Avg. Clustering Coefficient Run ●

Eigenvector Centrality Run ●

Edge Overview

Avg. Path Length Run ●

Dynamic

Nodes Run ●

Edges Run ●

Degree Run ●

Clustering Coefficient Run ●



Gephi nw visualization demo

The screenshot displays the Gephi software interface with a network graph visualization. The graph consists of 15 nodes and 22 edges, forming an undirected graph. The interface includes several panels:

- Appearance:** Contains settings for Nodes and Edges, including a color palette. A red circle highlights the 'Default' palette, and a red arrow points to it from a text box.
- Layout:** Shows the 'ForceAtlas 2' layout algorithm selected, with various parameters like 'Threads number' (3), 'Tolerance (speed)' (1.0), and 'Approximation' (1.2).
- Context:** Displays graph statistics: Nodes: 15, Edges: 22, Undirected Graph.
- Filters and Statistics:** Lists various network metrics such as Average Degree, Network Diameter, Graph Density, and PageRank, each with a 'Run' button.

A red box with a red arrow points to the 'Default' palette in the Appearance panel, containing the following text:

Pick a Default palette you like or create your own using the Color picker



Gephi nw visualization demo

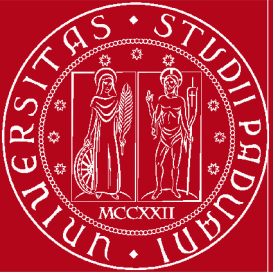
The screenshot displays the Gephi software interface with a network graph in the center. The graph consists of several nodes and edges, with a central node highlighted in purple. The interface is divided into several panels:

- Appearance:** Shows options for Nodes and Edges, with a dropdown menu for selecting an attribute for coloring.
- Layout:** Shows the ForceAtlas 2 layout algorithm selected, with various performance and tuning parameters.
- Context:** Shows network statistics: Nodes: 15, Edges: 22, Undirected Graph.
- Filters:** Shows the Statistics panel with various network metrics listed, including PageRank, which is circled in red.

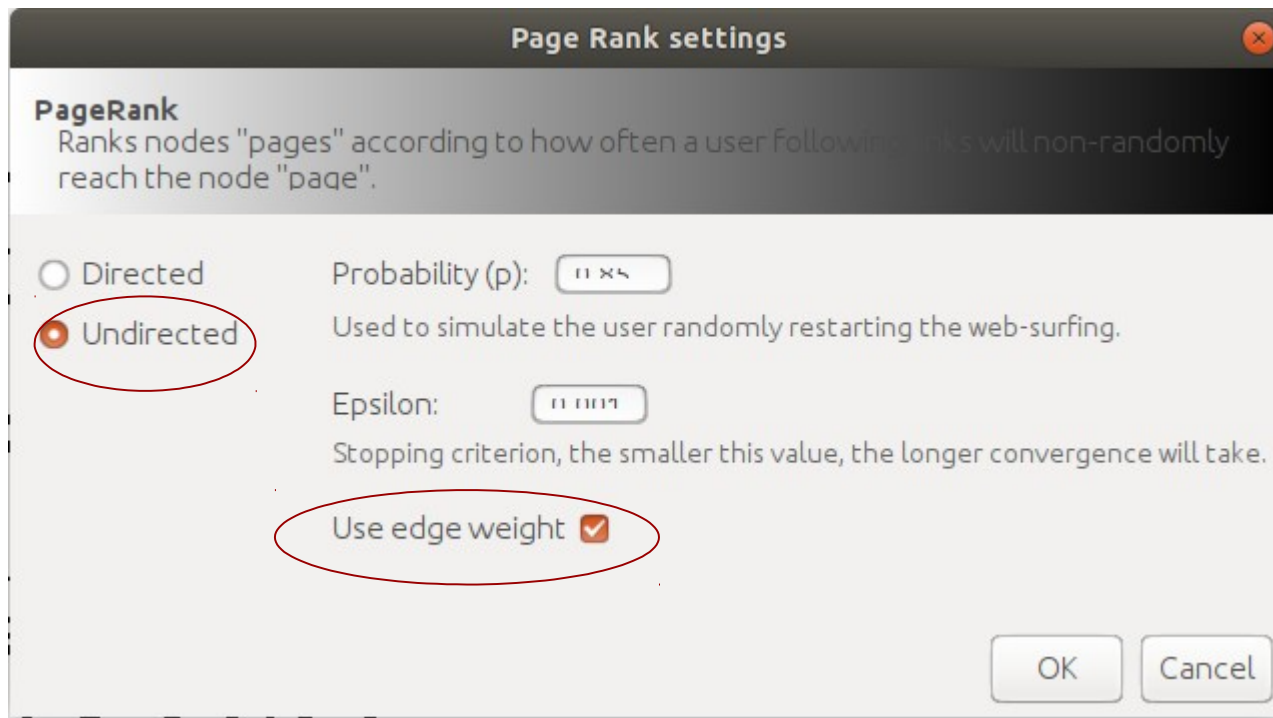
Two text boxes provide instructions:

Nice colors, but we can't really appreciate them because our nodes are too small. Let's adjust their size so it fits their (betweenes) centrality metric!

Under Statistics - Network Overview run the PageRank Algorithm.



Gephi nw visualization demo








Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges |   A 

Unique Ranking

---Choose an attribute

---Choose an attribute

Degree

PageRank

Apply

Pick Nodes - Size - Ranking.
From the dropdown menu of attributes choose PageRank.



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges | A tT

Unique Partition Ranking

Degree

Color:

Spline... |

Layout x

ForceAtlas 2

Threads number 3

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 1000.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

LinLog mode

Prevent Overlap

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15

Edges: 22

Undirected Graph

Filters Statistics x

Settings

Network Overview

Average Degree	Run	●	
Avg. Weighted Degree	Run	●	
Network Diameter	4	Run	⊕
Graph Density	Run	●	
HITS	Run	●	
Modularity	Run	●	
PageRank	Run	●	
Connected Components	Run	●	

Node Overview

Avg. Clustering Coefficient	Run	●
Eigenvector Centrality	Run	●

Edge Overview

Avg. Path Length	2,429	Run	⊕
------------------	-------	-----	---

Dynamic

# Nodes	Run	●
# Edges	Run	●
Degree	Run	●
Clustering Coefficient	Run	●

Lets display node labels.

Show Node Labels



Gephi nw visualization demo

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Partition Ranking

Degree

Color:

Spline... I

Apply

Layout x

ForceAtlas 2

Run

Performance

Tolerance (speed) 1.0

Approximate Repulsion

Approximation 1.2

Tuning

Scaling 1000.0

Stronger Gravity

Gravity 1.0

Behavior Alternatives

Dissuade Hubs

Link mode

Prevent Overlap

Edge Weight Influence 1.0

Prevent Overlap

Use only when spatialized. Should not be used with "Approximate Repulsion"

Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15

Edges: 22

Undirected Graph

Filters Statistics x

Settings

Network Overview

Average Degree	Run	●	
Avg. Weighted Degree	Run	●	
Network Diameter	4	Run	⊕
Graph Density	Run	●	
HITS	Run	●	
Modularity	Run	●	
PageRank	Run	●	
Connected Components	Run	●	

Node Overview

Avg. Clustering Coefficient	Run	●
Eigenvector Centrality	Run	●

Edge Overview

Avg. Path Length	2,429	Run	⊕
------------------	-------	-----	---

Dynamic

# Nodes	Run	●
# Edges	Run	●
Degree	Run	●
Clustering Coefficient	Run	●

Select Prevent Overlap and run ForceAtlas2 again, in case some of the node labels overlap.



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:37

Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory **Preview**

Workspace 1 x

Preview Settings x Preview x

Presets

Default Straight

Settings Manage renderers

Proportional size

Color custom [0,0,0]

Shorten label

Max characters 30

Outline size 0.0

Outline color custom [255,255,255]

Outline opacity 80.0

Box

Box color parent

Box opacity 100.0

Edges

Show Edges

Thickness 1.0

Rescale weight

Min. rescaled weight 0.1

Max. rescaled weight 1.0

Color mixed

Opacity 100.0

Curved

Radius 0.0

Edge Arrows

Size 3.0

Edge Labels

Show Labels

Font Arial 10 Plain

Color original

Shorten label

Max characters 30

Outline size 0.0

Outline color custom [255,255,255]

Outline opacity 80.0

Preview ratio: 100%

Export: SVG/PDF/PNG

Refresh

Background Reset zoom - +

Go to Preview tab. Pick "Default Straight Preset". Unselect the Edge Labels - Show Labels option and click on refresh. You'll see your graph and you can export it as an image(File - Export - SVG/PDF/PNG File)



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:38

Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Partition Ranking

Degree

Color:

Spline... | Apply

Layout x

ForceAtlas 2

Run

Performance

Tolerance (speed)	1.0
Approximate Repulsion	<input type="checkbox"/>
Approximation	1.2

Tuning

Scaling	1000.0
Stronger Gravity	<input type="checkbox"/>
Gravity	1.0

Behavior Alternatives

Dissuade Hubs	<input type="checkbox"/>
LinLog mode	<input type="checkbox"/>
Prevent Overlap	<input checked="" type="checkbox"/>

ForceAtlas 2

Presets... Reset

Graph x

Dragging (Configure)

To detect communities, we run the Statistics - Network Overview - Modularity algorithm

Context x

Nodes: 15
Edges: 22
Undirected Graph

Filters Statistics x

Settings

Network Overview	
Average Degree	Run
Avg. Weighted Degree	Run
Network Diameter	4 Run
Graph Density	Run
HITS	Run
Modularity	Run
PageRank	Run
Connected Components	Run

Node Overview	
Avg. Clustering Coefficient	Run
Eigenvector Centrality	Run

Edge Overview	
Avg. Path Length	2.429 Run

Dynamic	
# Nodes	Run
# Edges	Run
Degree	Run



Gephi nw visualization demo

The screenshot displays the Gephi 0.9.2 software interface. The main window shows a network graph with nodes and edges. A 'Modularity settings' dialog box is open in the center, with the 'OK' button circled in red. The dialog box contains the following information:

Modularity settings
Community detection algorithm.

- Randomize: Produce a better decomposition but increases computation time
- Use weights: Use edge weight
- Resolution: 1.0 (Lower to get more communities (smaller ones) and higher than 1.0 to get less communities (bigger ones).)

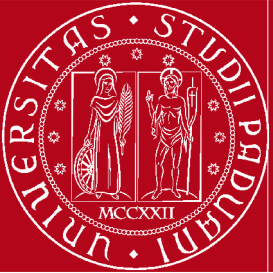
The interface also shows various panels on the left and right, including 'Appearance', 'Layout', 'Context', and 'Filters'. The 'Context' panel on the right displays network statistics:

Context
Nodes: 15
Edges: 22
Undirected Graph

Filters | Statistics x

Settings

- Network Overview**
 - Average Degree: Run
 - Avg. Weighted Degree: Run
 - Network Diameter: 4 Run
 - Graph Density: Run
 - HITS: Run
 - Modularity: Run (OK button)
 - PageRank: Run
 - Connected Components: Run
- Node Overview**
 - Avg. Clustering Coefficient: Run
 - Eigenvector Centrality: Run
- Edge Overview**
 - Avg. Path Length: 2.429 Run
- Dynamic**
 - # Nodes: Run
 - # Edges: Run
 - Degree: Run



Gephi nw visualization demo

The screenshot shows the Gephi 0.9.2 interface with the Data Laboratory tab active. The table displays various centrality metrics for 15 nodes. The 'Modularity Class' column is highlighted, and the 'Export table' button is circled. A text box explains that users can sort or filter by Modularity Class and export the table as a .csv file.

Id	Label	Interval	Eccentricity	Closeness Centrality	Harmonic Closeness Centrality	Betweenness Centrality	Modularity Class
1	Lejla		2.0	0.666667	0.75	67.0	0
11	Asmira		3.0	0.482759	0.583333	18.5	0
12	Amira		3.0	0.466667	0.547619	5.5	0
13	Azra		4.0	0.341463	0.422619	0.0	0
14	Sneza		4.0	0.333333	0.386905	0.0	0
15	Ena		3.0	0.411765	0.452381	0.0	0
2	Antonela		3.0	0.482759	0.559524	0.0	1
3	Sulejman		3.0	0.518519	0.630952	18.0	1
4	Maja		3.0	0.518519	0.630952	16.0	1
8	Nenad		4.0	0.35	0.404762	0.0	1
9	Selma		4.0	0.378378	0.488095	1.0	1
10	Naida		4.0	0.358974	0.440476	0.0	1
5	Lejla S.		3.0	0.466667	0.547619	24.0	2
6	Amina		4.0	0.333333	0.410714	0.0	2
7	Ilma		4.0	0.333333	0.410714	0.0	2

We can see the results in the Data Laboratory tab. We can sort them or filter by Modularity Class to inspect which nodes were assigned to which class. We can also export this table (as .csv file).



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:39

Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1

Data Table

Nodes	Edges	Configuration	Add node	Add edge	Search/Replace	Import Spreadsheet	Export table	More actions	Filter:	Id
id	Label	Interval	Eccentricity	Closeness Centrality	Harmonic Closeness Centrality	Betweenness Centrality	Modularity Class			
1	Lejla		2.0	0.666667	0.75	67.0	0			
11	Asmira		3.0	0.482759	0.583333	18.5	0			
12	Amira		3.0	0.466667	0.547619	5.5	0			
13	Azra		4.0	0.341463	0.422619	0.0	0			
14	Sneza		4.0	0.333333	0.386905	0.0	0			
15	Ena		3.0	0.411765	0.452381	0.0	0			
2	Antonela		3.0	0.482759	0.559524	0.0	1			
3	Sulejman		3.0			18.0	1			
4	Maja		3.0			16.0	1			
8	Nenad		4.0			0.0	1			
9	Selma		4.0			1.0	1			
10	Najda		4.0			0.0	1			
5	Lejla S.		3.0			24.0	2			
6	Amina		4.0			0.0	2			
7	Ilma		4.0			0.0	2			

Export

Save In: Desktop

cne knjige] BusinessGames TJ
:intly Books] Music SocSci.csv
d Semester] SecondSemester

File Name: SocSci.csv

Files of Type: Spreadsheet Files (*.csv *.tsv)

OK Cancel

Save selected file.

Options...

Graph: Full The complete graph is exported
 Visible only Only the current visualized graph is exported

Add column Merge columns Delete column Clear column Copy data to other column Fill column with a value Duplicate column Create a boolean column from regex match Create a column with list of regex matching groups Negate boolean values Convert column to dynamic



Gephi nw visualization demo

The screenshot displays the Gephi 0.9.2 interface with a network graph visualization. The graph shows several nodes connected by edges, with nodes labeled: Maja, Sulejman, Lejla, Amira, Asmira, Azja, Senka, Selma, Antoneia, and Lejla S. The interface includes several panels:

- Appearance:** The 'Partition' tab is selected, and 'Modularity Class' is chosen as the attribute for coloring nodes. The 'Apply' button is visible.
- Layout:** The 'ForceAtlas 2' layout is selected, and the 'Run' button is visible.
- Context:** The 'Network Overview' panel shows statistics for the graph, including Average Degree, Avg. Weighted Degree, Network Diameter (4), Graph Density, HITS, Modularity (0.439), PageRank, and Connected Components. The 'Node Overview' panel shows Avg. Clustering Coefficient, Eigenvector Centrality, and the 'Edge Overview' panel shows Avg. Path Length (2.429).

A text box overlaid on the graph states: "We can also color the nodes according to their community by choosing Modularity Class as the partition attribute."



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:39

Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Partition Ranking

Modularity Class

- 0 (40%)
- 1 (40%)
- 2 (20%)

I Palette... Apply

Layout x

ForceAtlas 2 Run

Performance

- Tolerance (speed) 1.0
- Approximate Repulsion
- Approximation 1.2

Tuning

- Scaling 1000.0
- Stronger Gravity
- Gravity 1.0

Behavior Alternatives

- Dissuade Hubs
- LinLog mode
- Prevent Overlap

ForceAtlas 2 Presets... Reset

Graph x

Dragging (Configure)

Context x

Nodes: 15
Edges: 22
Undirected Graph

Filters Statistics x

Settings

Network Overview

Average Degree	Run
Avg. Weighted Degree	Run
Network Diameter	4 Run
Graph Density	Run
HITS	Run
Modularity	0.439 Run
PageRank	Run
Connected Components	Run

Node Overview

Avg. Clustering Coefficient	Run
Eigenvector Centrality	Run

Edge Overview

Avg. Path Length	2.429 Run
------------------	-----------

Dynamic

# Nodes	Run
# Edges	Run
Degree	Run



Gephi nw visualization demo

Activities Gephi 0.9.2 mer 19:39

Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

- New Project Ctrl+Shift+N
- Open... Ctrl+O
- Open Recent...
- Close Project
- Properties...
- Import spreadsheet...
- Import Database
- Import...
- Generate
- Save Ctrl+S
- Save As...
- Export
 - Graph file...
 - SVG/PDF/PNG file...
- Exit

Box

Box color parent

Box opacity 100.0

Edges

Show Edges

Thickness 1.0

Rescale weight

Min. rescaled weight 0.1

Max. rescaled weight 1.0

Color mixed

Opacity 100.0

Curved

Radius 0.0

Edge Arrows

Size 3.0

Edge Labels

Show Labels

Font Arial 10 Plain

Color original

Shorten label

Max characters 30

Outline size 0.0

Outline color custom [255,255,255]

Outline opacity 80.0

Preview ratio: 100%

Refresh

Export: SVG/PDF/PNG

Background Reset zoom - +

Go to Preview tab. Pick "Default Straight Preset". Unselect the Edge Labels - Show Labels option and click on refresh. You'll see your graph and you can export it as an image (File - Export - SVG/PDF/PNG File)

```
graph LR; Maja --- Sulejman; Maja --- Antonela; Sulejman --- Nejad; Sulejman --- Lejla; Antonela --- Lejla; Lejla --- Ena; Lejla --- Azra; Lejla --- Sneza; Amira --- Asmira; Asmira --- Sneza; Lejla --- Lejla_S[Lejla S.]; Lejla_S --- Arjuna; Arjuna --- Ilija;
```




Gephi nw visualization demo

The screenshot displays the Gephi 0.9.2 application window. The main workspace shows a network graph with nodes labeled: Azra, Sneza, Amira, Asmira, Ena, Lejla S., Armina, and Ilija. An 'Export' dialog box is open, showing the following settings:

- Save In: Desktop
- File Name: SocSci
- Files of Type: PNG Files (*.png)

The 'Export' dialog box also includes 'OK', 'Cancel', 'Options...', and 'Save selected file.' buttons. The left sidebar contains the 'Preview Settings' panel with various options for rendering the graph, such as 'Proportional size', 'Color', 'Shorten label', 'Max characters', 'Outline size', 'Outline color', 'Outline opacity', 'Box', 'Box color', 'Box opacity', 'Edges', 'Show Edges', 'Thickness', 'Rescale weight', 'Min. rescaled weight', 'Max. rescaled weight', 'Color', 'Opacity', 'Curved', 'Radius', 'Edge Arrows', 'Size', 'Edge Labels', 'Show Labels', 'Font', 'Color', 'Shorten label', 'Max characters', 'Outline size', 'Outline color', 'Outline opacity', and 'Preview ratio: 100%'. The bottom status bar shows 'Export: SVG/PDF/PNG' and 'Background Reset zoom - +'.

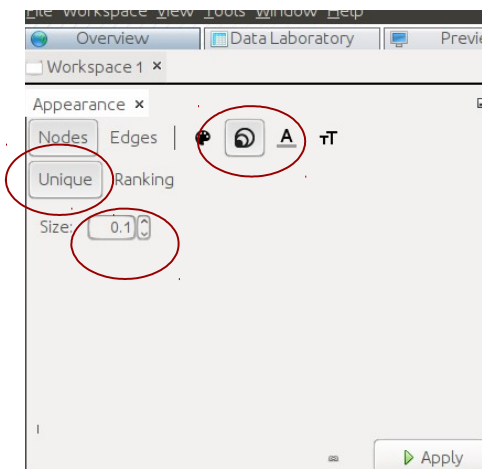


Displaying communities in larger network

For semantic networks, we are going to display labels only.



Turn on the Show Node Labels.



Change unique node size to 0.1 one.



Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Ranking

PageRank

Min size: 0.6 Max size: 2

Spline... 1

Apply

Layout x

Radial Axis Layout

Run

Ascending Order of Spar/Axis

Draw Spar/Axis as Spiral

Enable Transition

Group Nodes by Degree

Knock down Axes/Spars

Knock down Range Middle Range

Node Layout Direction Counter Clockwise

Node Size 5

Number of Axes/Spars 3

Order Nodes in Spar/Axis by Degree

Resize Nodes

Scaling Width 1.2

Transition Steps 100000.0

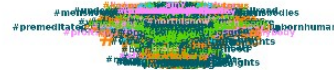
Radial Axis Layout

Presets... Reset

Graph x

Dragging (Configure)

1. Under Layout choose Radial Axis Layout and the option Group Nodes by Degree. Run the Layout algorithm.



Context x

Nodes: 5951

Edges: 228042

Undirected Graph

Statistics x

Settings

Graph Density Run

HITS Run

Modularity 0.103 Run

PageRank Run

Filters x

Reset

Library

Attributes

Dynamic

Edges

Operator

Topology

Saved queries

Queries

Drag filter here

Select

Filter

Output Radial Axis Layout ended at iteration 2



Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Ranking

PageRank

Min size: 0.6 Max size: 2

Spline... 1

Apply

Layout x

Radial Axis Layout

Run

Ascending Order of Spar/Axis

Draw Spar/Axis as Spiral

Enable Transition

Group Nodes by Modularity Class (Attribute)

Knockdown Axes/Spars

Knockdown Range Middle Range

Node Layout Direction Counter Clockwise

Node Size 5

Number of Axes/Spars 3

Order Nodes in Spar/Axis by Degree

Resize Nodes

Scaling Width 1.2

Transition Steps 100000.0

Radial Axis Layout

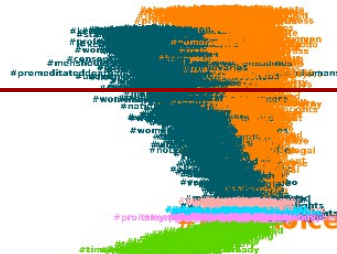
Presets... Reset

Output Radial Axis Layout ended at iteration 2

Graph x

Dragging (Configure)

2. Choose Modularity Class and run again.



Context x

Nodes: 5951

Edges: 228042

Undirected Graph

Statistics x

Settings

Graph Density Run

HITS Run

Modularity 0.103 Run

PageRank Run

Filters x

Reset

Library

Attributes

Dynamic

Edges

Operator

Topology

Saved queries

Queries

Drag filter here

Select

Filter



File Workspace View Tools Window Help

Overview | Data Laboratory | Preview

Workspace 1 x

Appearance x

Nodes Edges |

Unique Ranking

PageRank

Min size: 0.6 Max size: 2

Spline... | Apply

Layout x

Radial Axis Layout

Run

Ascending Order of Spar/Axis

Draw Spar/Axis as Spiral

Enable Transition

Group Nodes by Modularity Class (Attribute)

Knockdown Axes/Spars

Knockdown Range Middle Range

Node Layout Direction Counter Clockwise

Node Size 5

Number of Axes/Spars 3

Order Nodes in Spar/Axis by Degree

Resize Nodes

Scaling Width 1.2

Transition Steps 100000.0

Draw Spar/Axis as Spiral

Draw each spar or axis with a slight spiral to improve readability of edges between nodes on the spar.

Presets... Reset

Graph x

Dragging (Configure)

3. Select the option draw Spar/Axis as Spiral. Run the algorithm again.

Context x

Nodes: 5951
Edges: 228042
Undirected Graph

Statistics x

Settings

Graph Density Run

HITS Run

Modularity 0.103 Run

PageRank Run

Filters x

Reset

Library

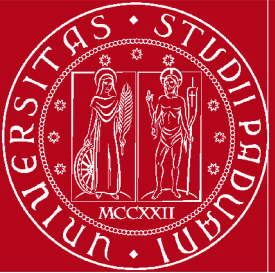
- Attributes
- Dynamic
- Edges
- Operator
- Topology
- Saved queries

Queries

Drag filter here

Select Filter

Output Radial Axis Layout ended at iteration 2



File Workspace View Tools Window Help

Overview | DataLaboratory | Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Ranking

Size: 0.1

Apply

Layout x

Radial Axis Layout

Run

Ascending Order of Spar/Axis

Draw Spar/Axis as Spiral

Enable Transition

Group Nodes by Modularity Class (Attribu...)

Knockdown Axes/Spars

Knockdown Range Middle Range

Node Layout Direction Counter Clockwise

Node Size 5

Number of Axes/Spars 3

Order Nodes in Spar/Axis by Degree

Resize Nodes

Scaling Width 1.2

Transition Steps 100000.0

Radial Axis Layout

Presets... Reset

Output

4. Select the option Ascending Order of Spar/Axis. Run again.



Gephi 0.9.2 - Project 1 - Project 2 - Project 3 - Project 4

File Workspace View Tools Window Help

Overview Data Laboratory Preview

Workspace 1 x

Appearance x

Nodes Edges

Unique Ranking

PageRank

Min size: 0.6 Max size: 2

Spline... |

Apply

Layout x

Label Adjust

Run

Run the layout algorithm

Include Node size
Speed 1.0

Label Adjust

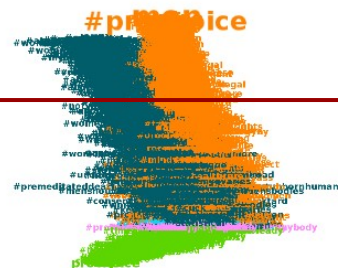
Presets... Reset

Output

Graph x

Dragging (Configure)

5. Finally, choose Label Adjust layout and run the layout algorithm.



Context x

Nodes: 5951
Edges: 228042
Undirected Graph

Statistics x

Settings

Graph Density	Run	●
HITS	Run	●
Modularity 0.103	Run	⊕
PageRank	Run	⊕

Filters x

Reset | [] [] A+

- Library
 - Attributes
 - Dynamic
 - Edges
 - Operator
 - Topology
 - Saved queries

Queries

Drag filter here

Select

Filter



Questions?

