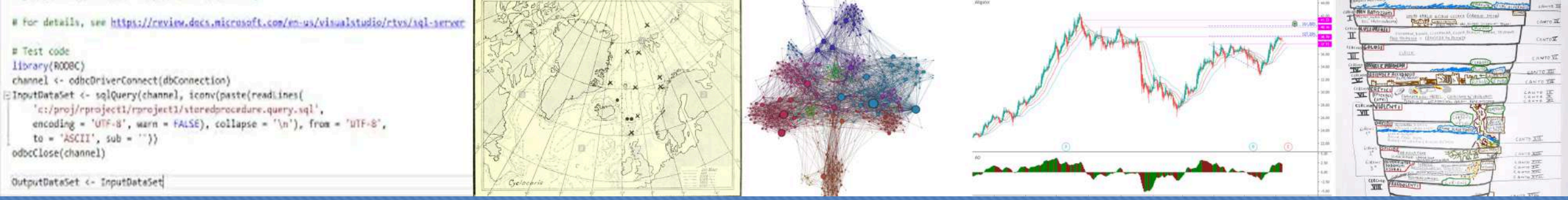

Gephi

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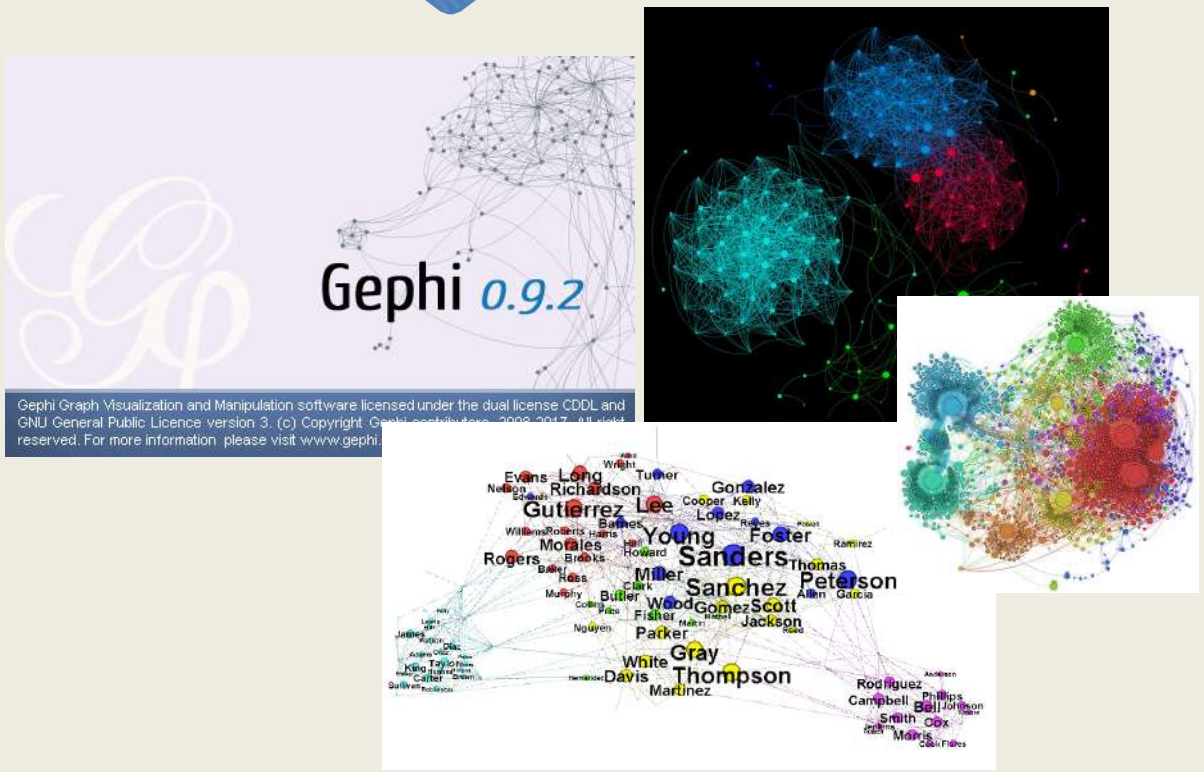
université de TOURS

ucc
Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland

MARIE CURIE ACTIONS

Gephi

https://gephi.org/



Gephi is an open-source network analysis and visualization software package written in Java on the NetBeans platform.

Gephi has been used in a number of research projects in academia, journalism and elsewhere, for instance in visualizing the global connectivity of New York Times content and examining Twitter network traffic during social unrest along with more traditional network analysis topics. Gephi is widely used within the digital humanities (in history, literature, political sciences, etc.), a community where many of its developers are involved.

Source: https://en.wikipedia.org/wiki/Gephi

Formats

- As input → All the tabular formats (csv is always the better one) included json or gdf,
- As outcome → Gephi can save and export in several formats such as png, pdf, svg, kml, shp, js.

Datasets

Red columns are mandatory. The standard variable may be direct (univocal relation) or indirect (bi-univocal relation) depending on the relation.

Edges

	A	B	C
1	Source	Target	Type
2	Giovanni	Nancy	Direct
3	Giovanni	Poitiers	Direct
4	Isabelle	Paris	Direct
5	Isabelle	Nancy	Direct
6	Laura	Nancy	Direct
7	Silvia	Paris	Direct
8	Silvia	Nancy	Direct

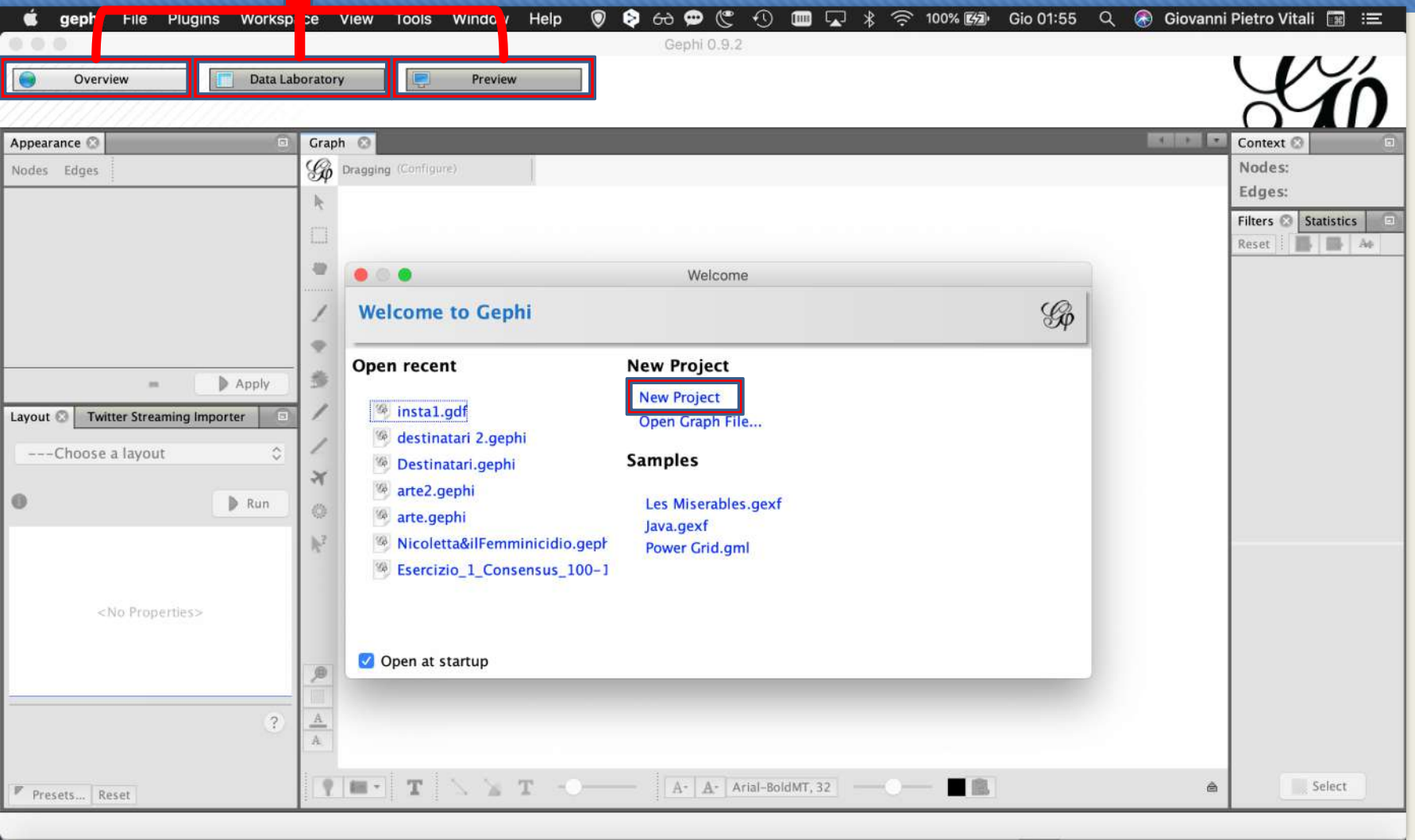
Nodes

	A	B	C	D	E	F
1	ID	Label	attribute	role	lat	lng
2	Nancy	Nancy	4	city	48.692034	6.182367
3	Poitiers	Poitiers	1	city	46.580123	0.338505
4	Giovanni	Giovanni	2	teacher	44.074621	10.479448
5	Laura	Laura	1	professeur	45.537141	12.642686
6	Silvia	Silvia	2	teacher	45.064231	7.677655
7	Paris	Paris	2	city	48.859268	2.347747
8	Isabelle	Isabelle	2	professeur	45.837876	1.253814

Nodes:
ID is the unique identification value of each element.
Label is the label that Gephi will display for that element.

Edges:
Source and Target must express the ID values (table nodes).

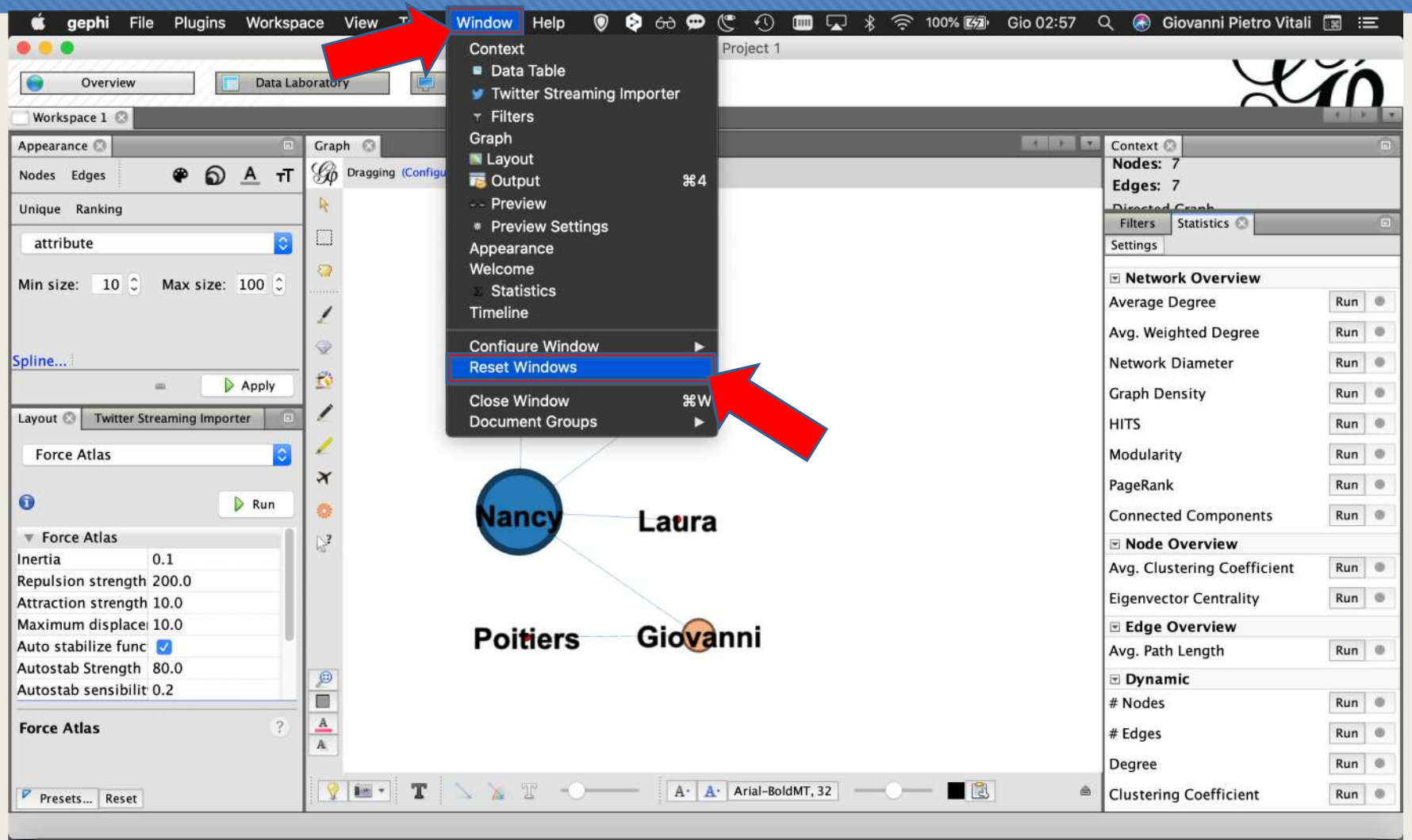
Sofware



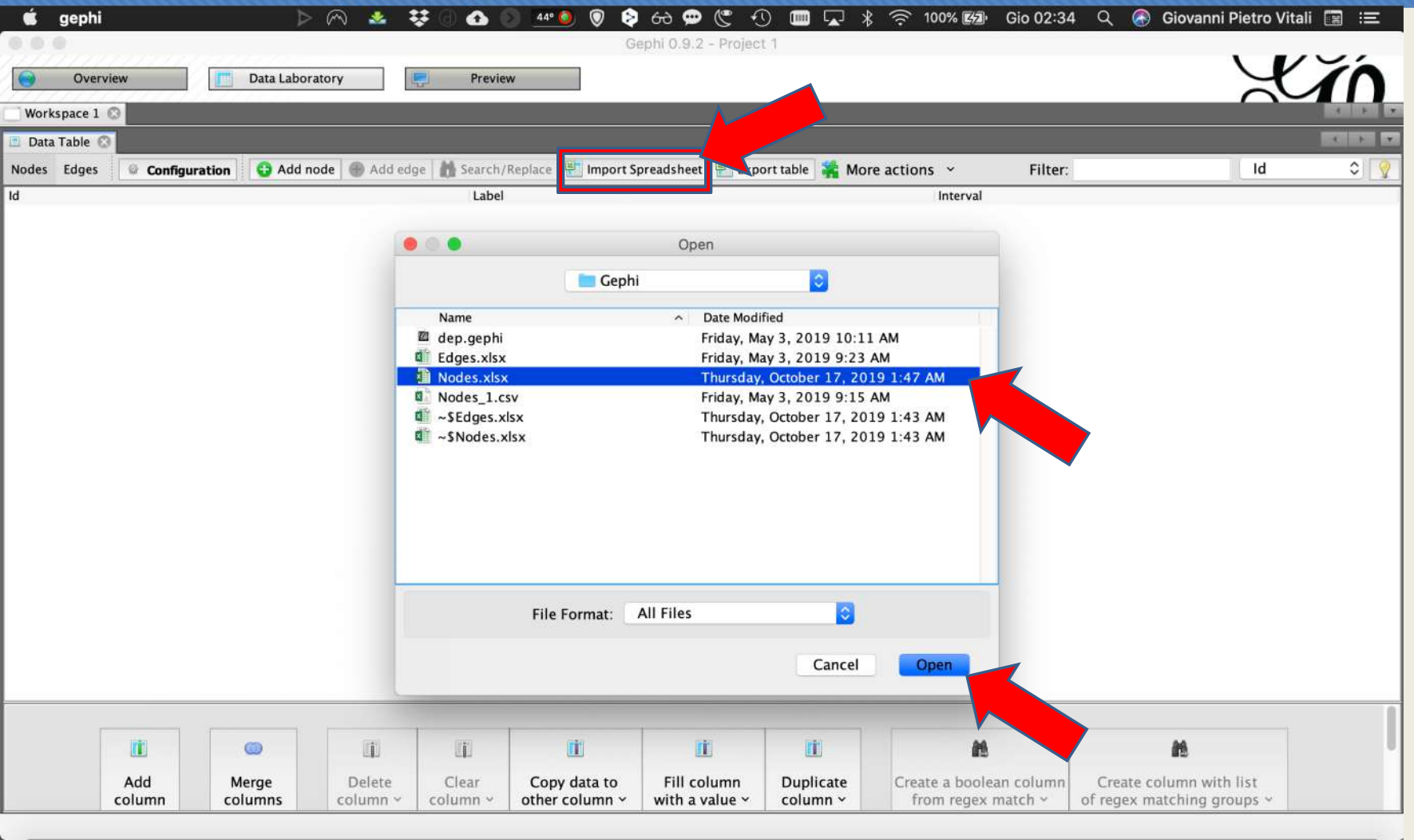
These three options must be used at the same time. For a good use of Gephi it is necessary to pass constantly between the **overview**, the **data laboratory** and the **preview**.

- The **data laboratory** contains the tables with data
- The **Overview** is a draft of the final graph where you can customize options such as colors, spatializations or sizes of nodes and edges.
- The **preview** is the graphical section where you can draw the last details of the graph and save or export.

Too messy windows? Restart them!



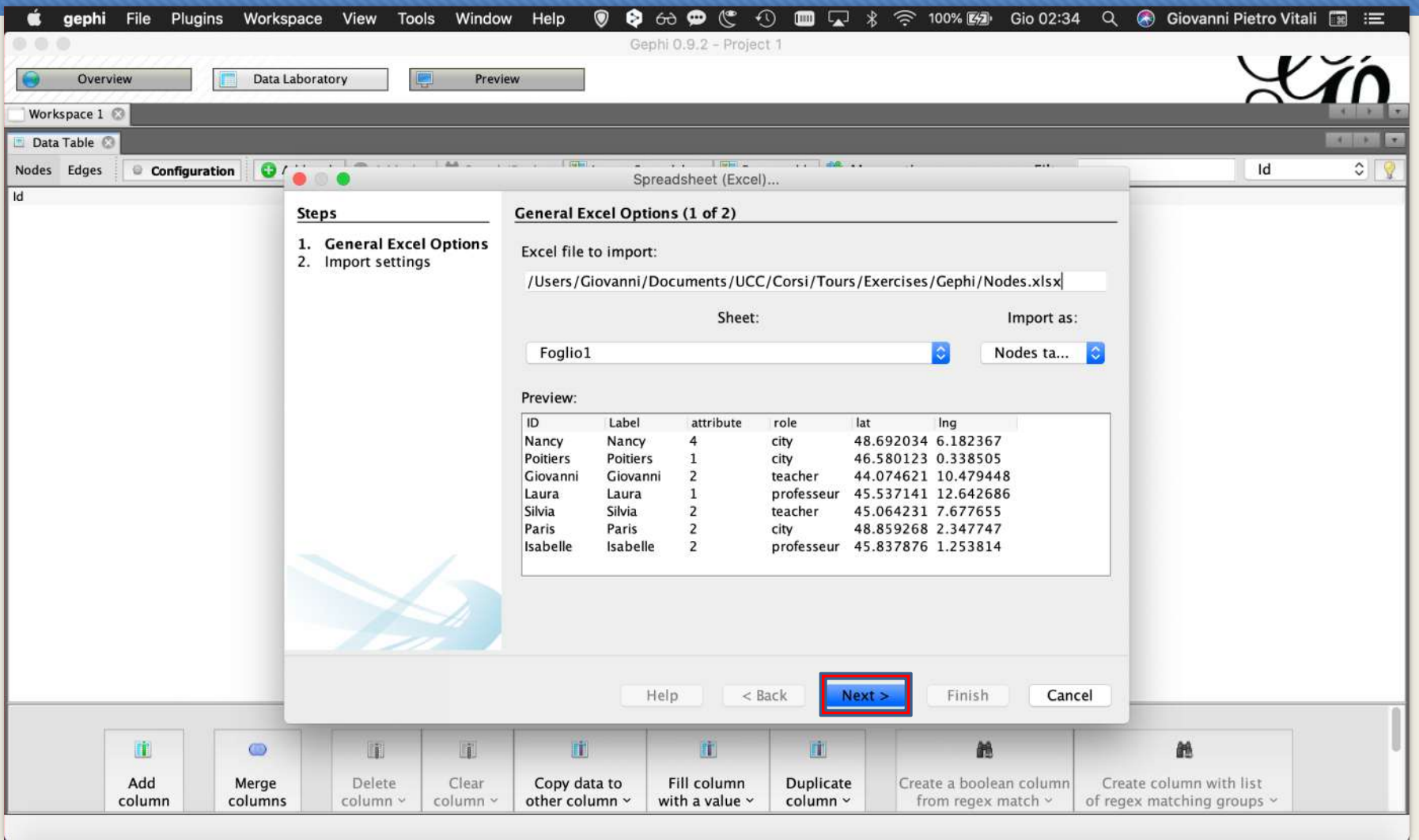
Data Laboratory



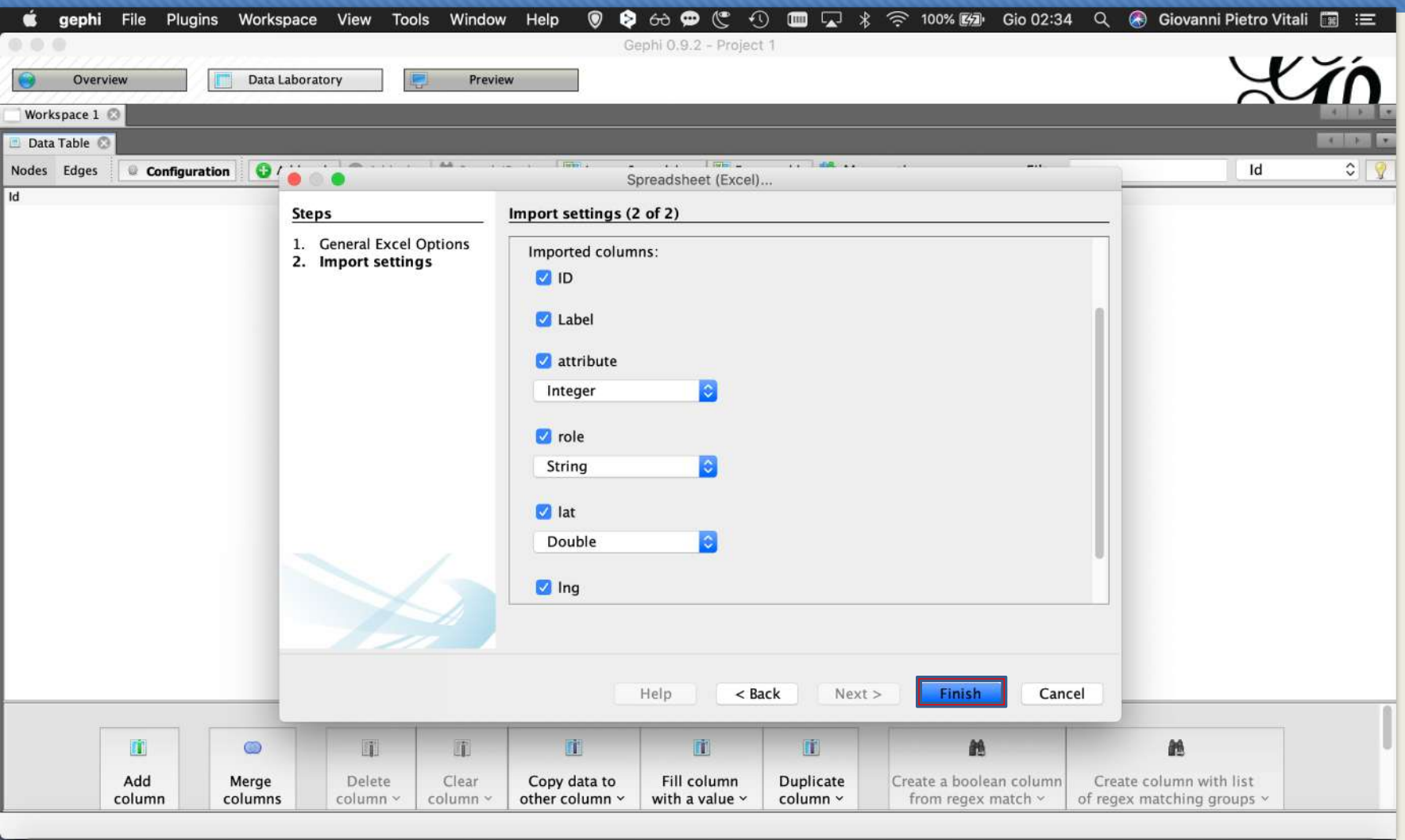
You always start at the data laboratory after you create a new project.

It is always good practice to import nodes first.

Check import preview

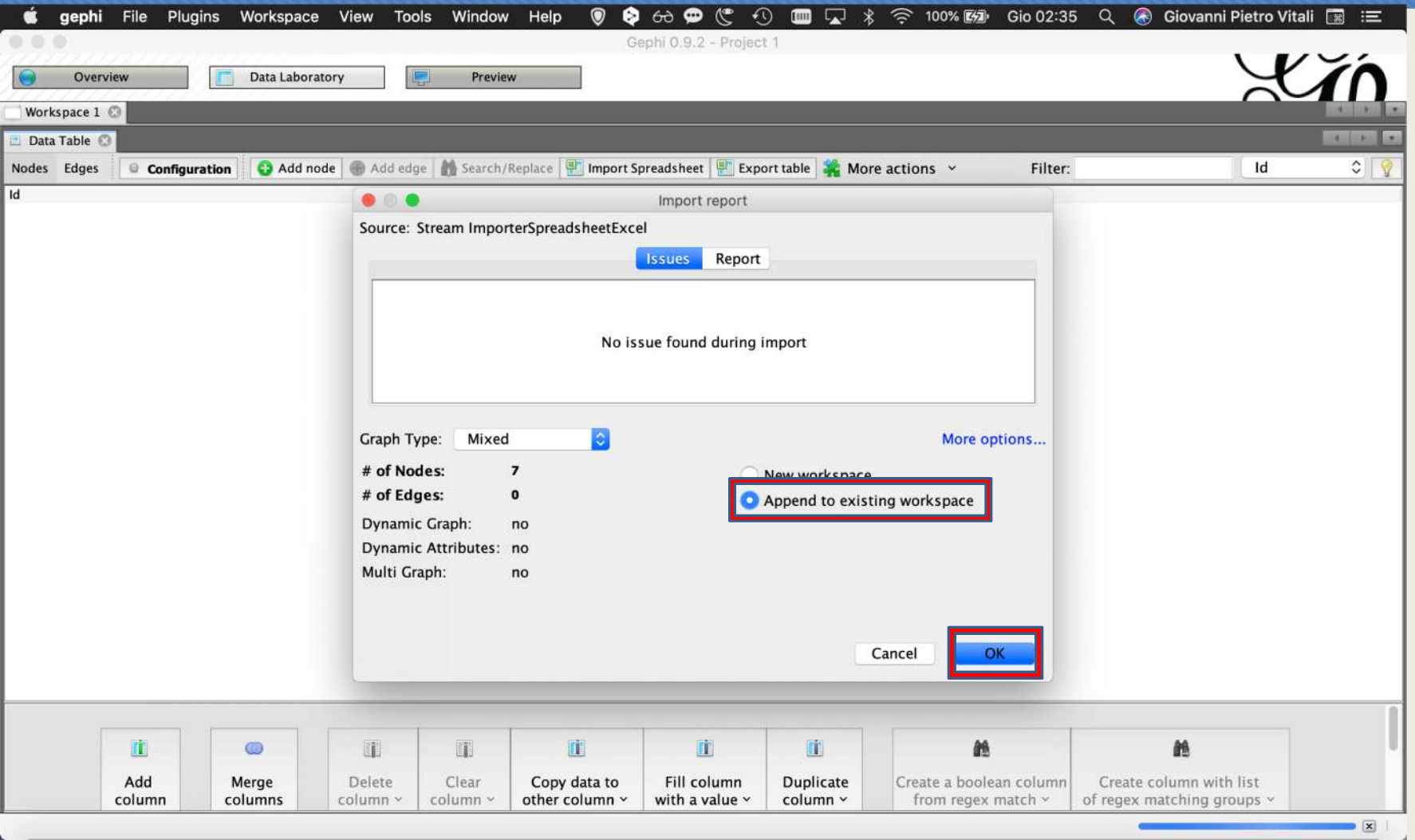


Gephi matches each variable (column) with a typology.

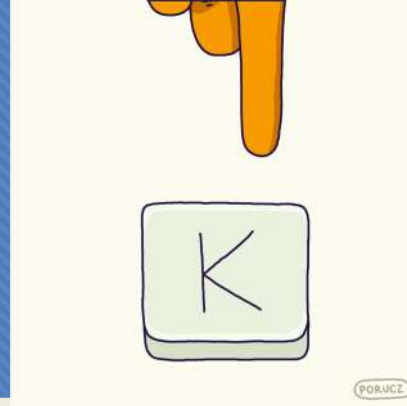


The latitude and longitude variables must always be double.

Append to existing workspace!



The data laboratory has been updated.



gephi File Plugins Workspace View Tools Window Help 100% Gio 02:35 Giovanni Pietro Vitali

Gephi 0.9.2 - Project 1

Overview | Data Laboratory | Preview

Workspace 1

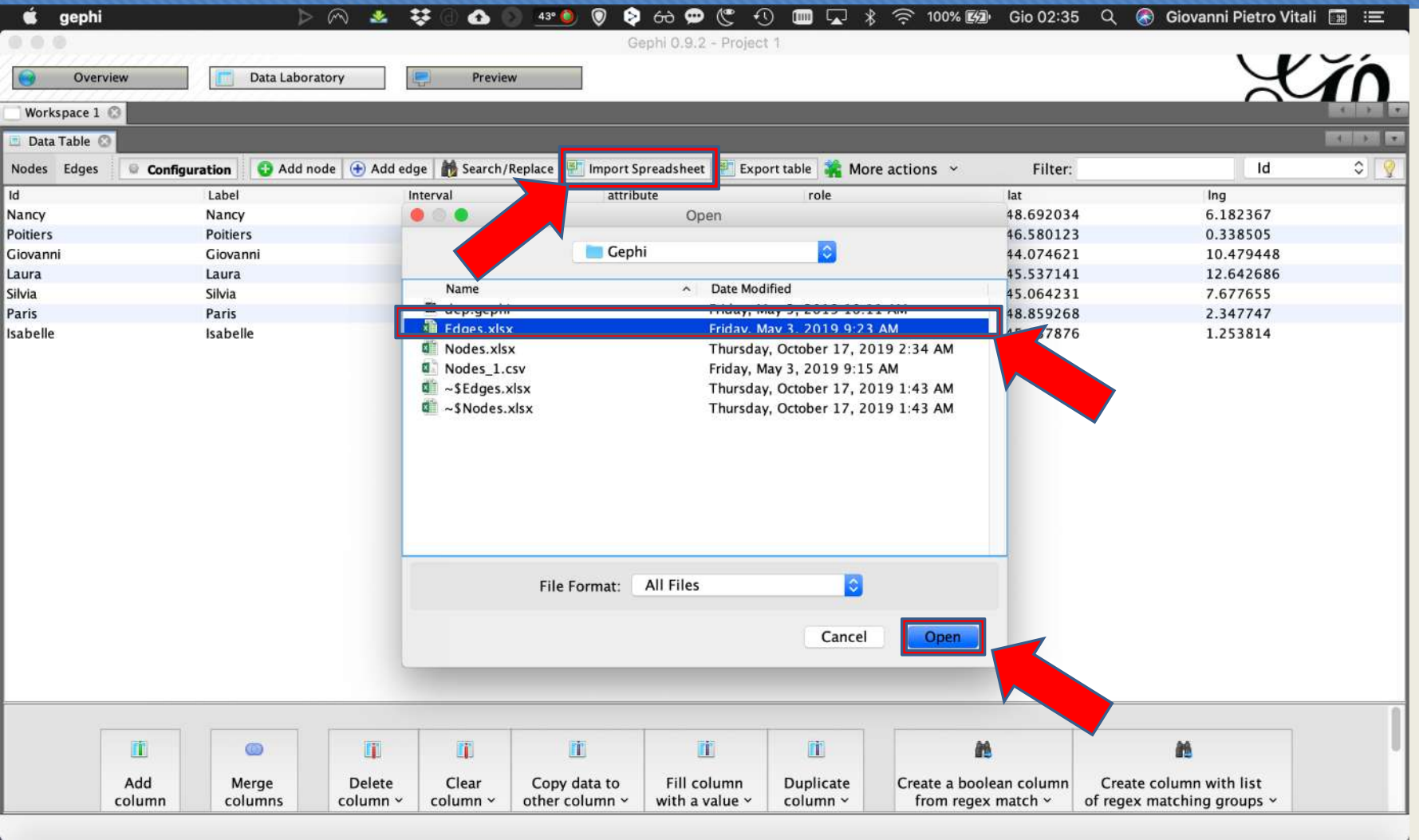
Data Table

Nodes | Edges | Configuration | Add node | Add edge | Search/Replace | Import Spreadsheet | Export table | More actions | Filter: | Id

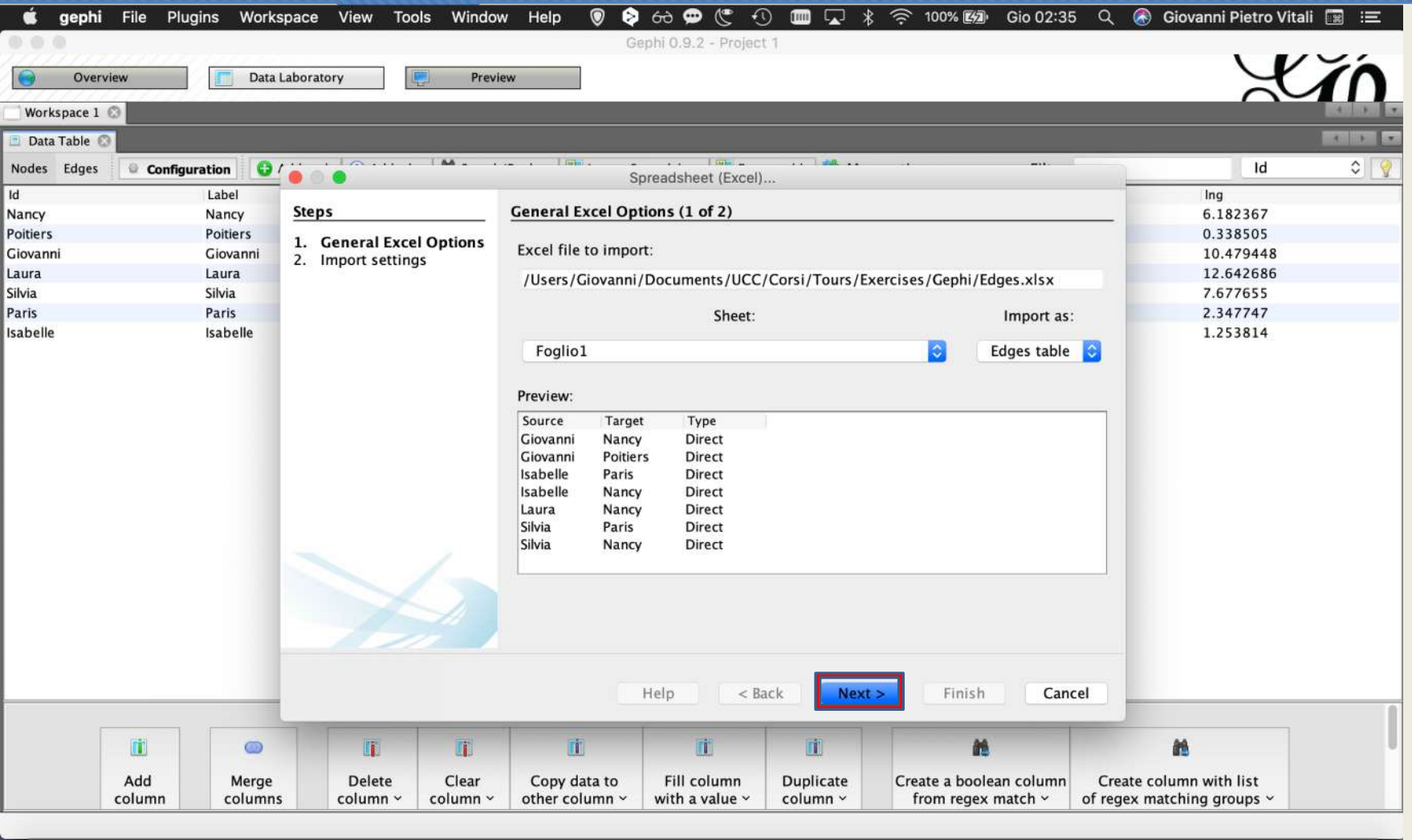
Id	Label	Interval	attribute	role	lat	lng
Nancy	Nancy		4	city	48.692034	6.182367
Poitiers	Poitiers		1	city	46.580123	0.338505
Giovanni	Giovanni		2	teacher	44.074621	10.479448
Laura	Laura		1	professeur	45.537141	12.642686
Silvia	Silvia		2	teacher	45.064231	7.677655
Paris	Paris		2	city	48.859268	2.347747
Isabelle	Isabelle		2	professeur	45.837876	1.253814

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 column with list of regex matching groups

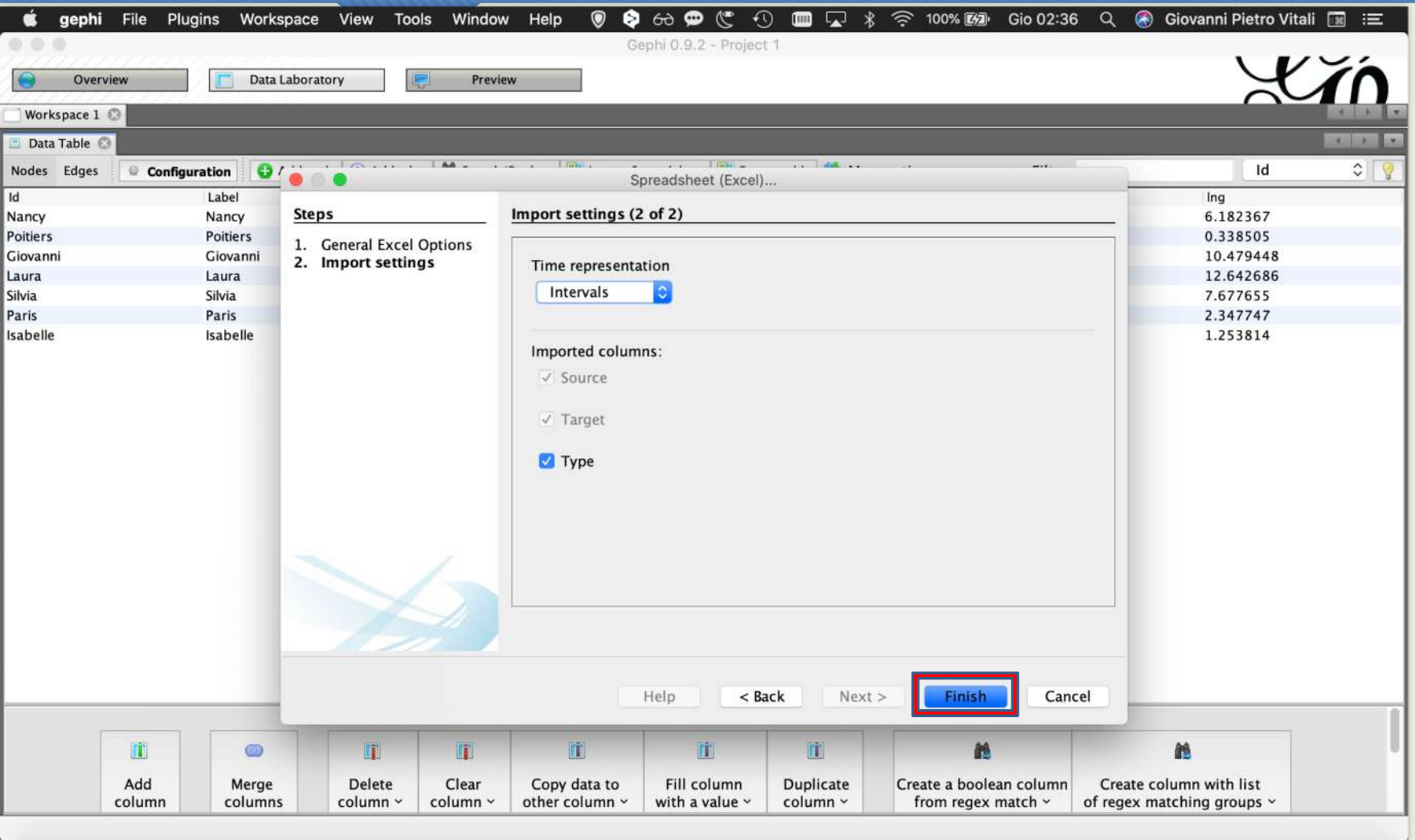
Repeat the same operation with the edges.



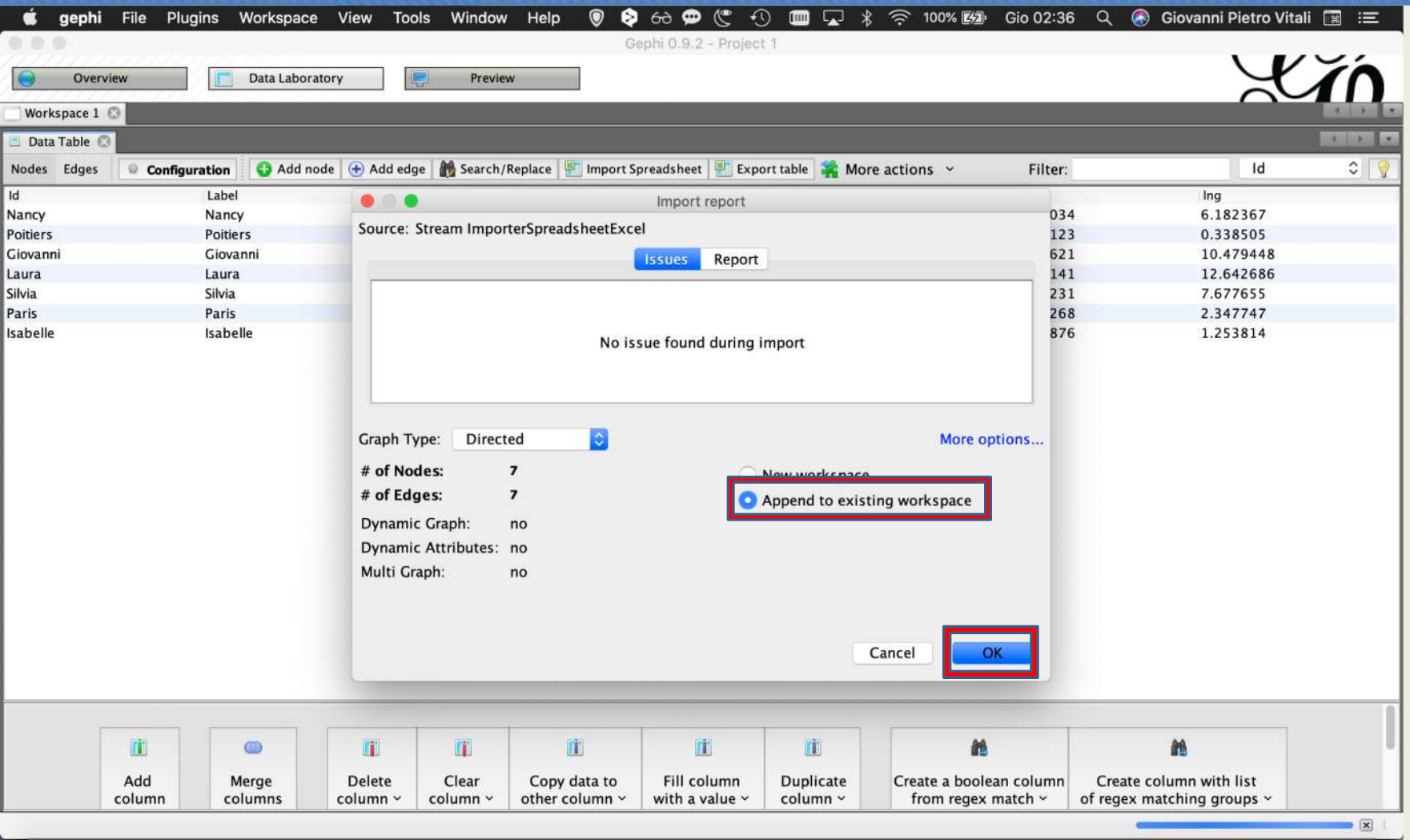
Check import preview



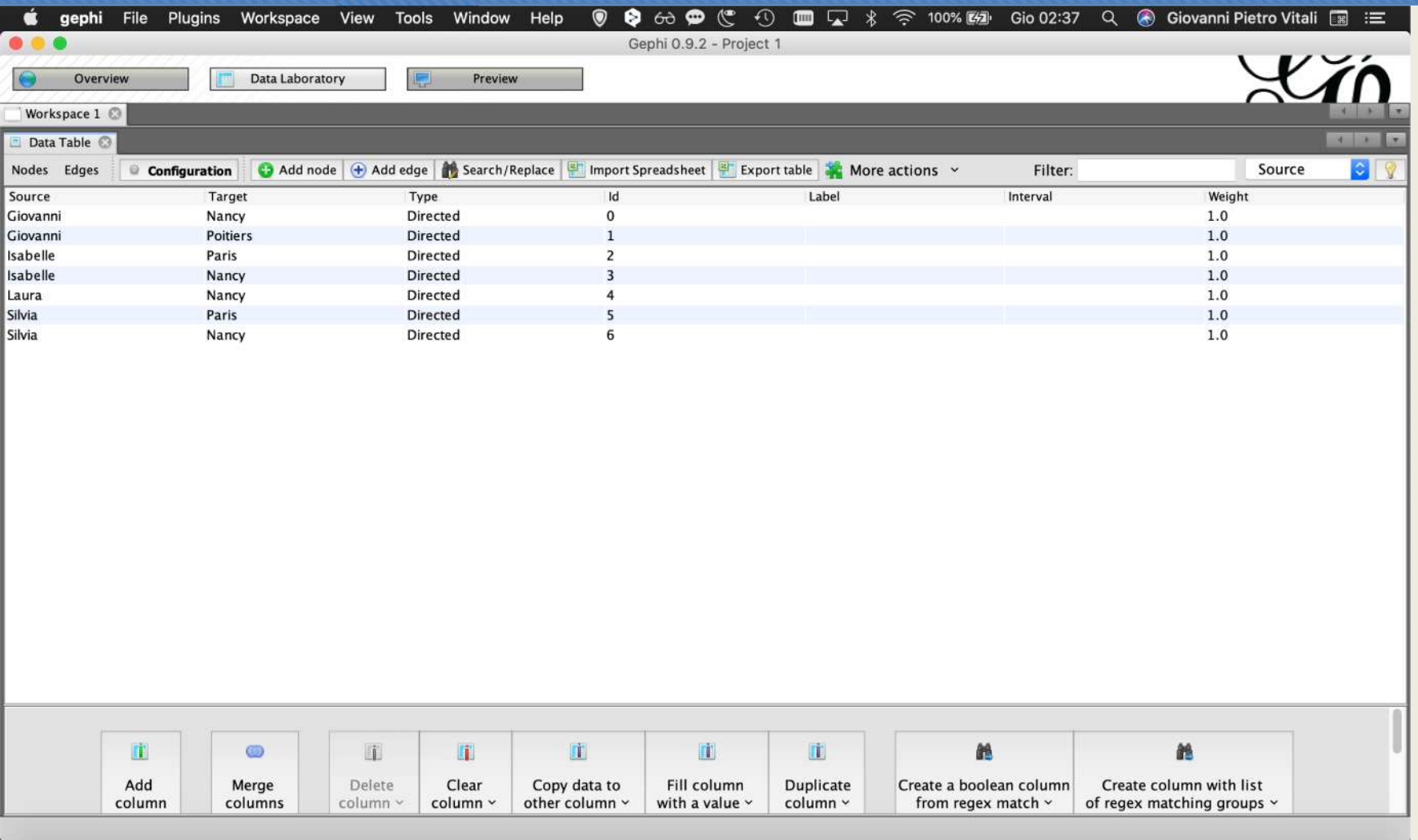
Gephi matches each variable (column) with a typology.

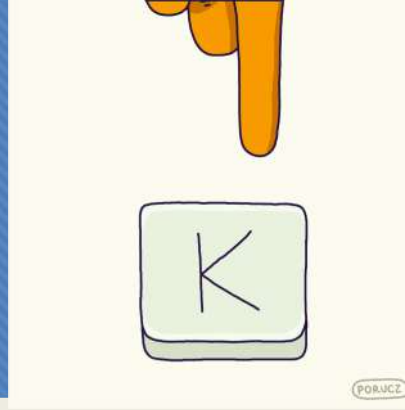


Append to existing workspace!

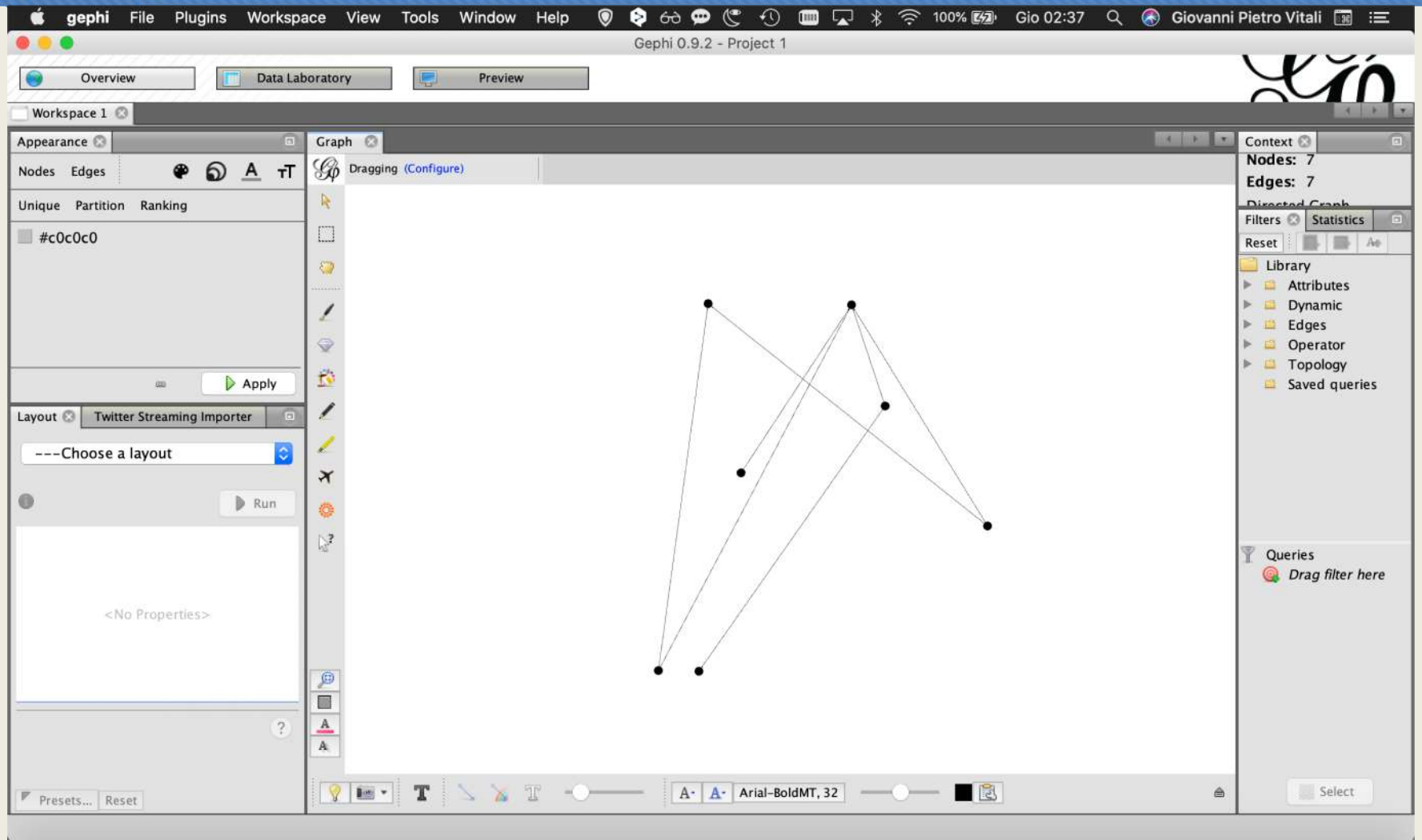


The data laboratory has been updated.

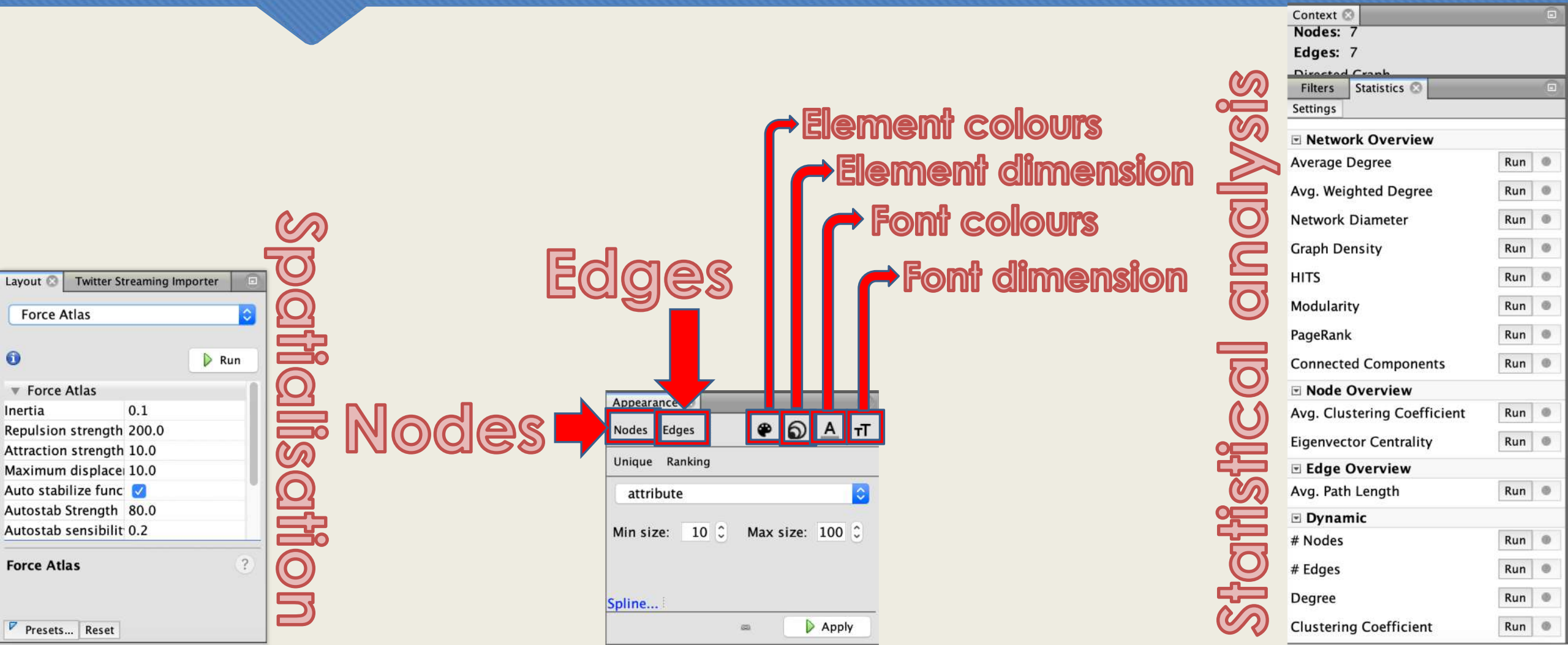




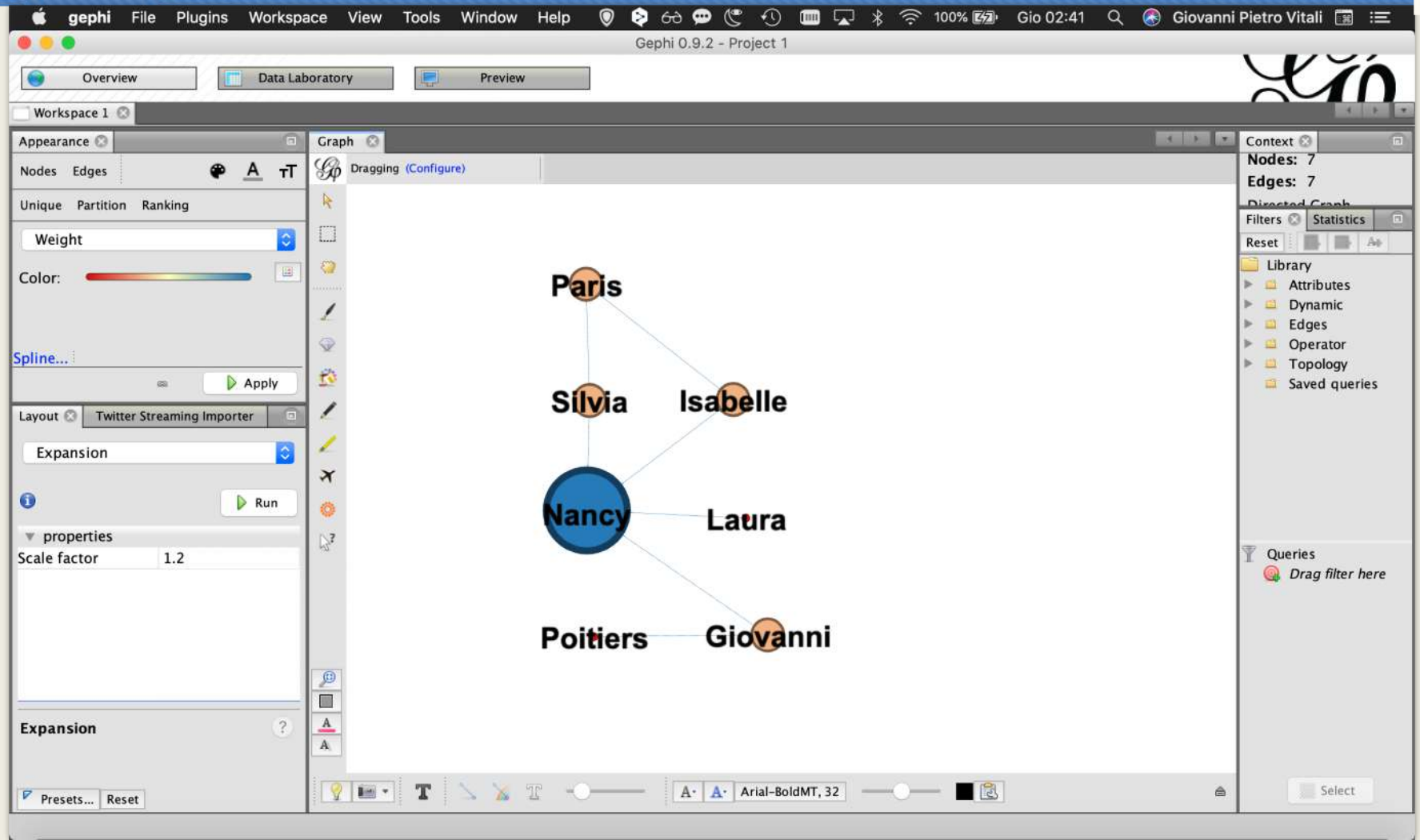
Overview


gephi File Plugins Workspace View Tools Window Help
Gephi 0.9.2 - Project 1
Overview
Data Laboratory
Preview
Workspace 1
Appearance
Nodes Edges
Unique Partition Ranking
#c0c0c0
Apply
Layout
Twitter Streaming Importer
---Choose a layout
Run
<No Properties>
Presets...
Reset
Graph
Dragging (Configure)
Arial-BoldMT, 32
Context
Nodes: 7
Edges: 7
Filters
Statistics
Reset
Library
Attributes
Dynamic
Edges
Operator
Topology
Saved queries
Queries
Drag filter here
Select

The parts of the Overview

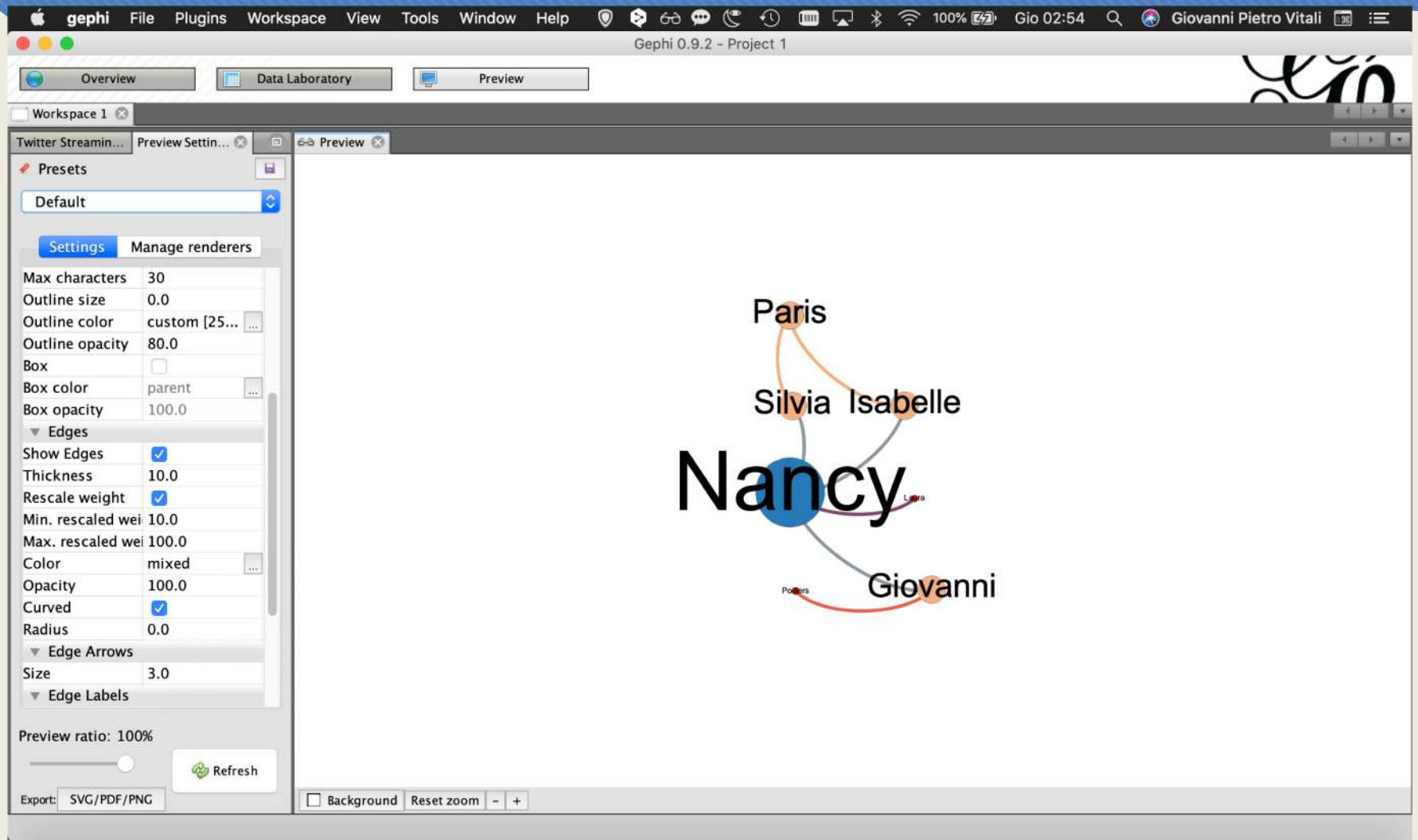


Customising the overview



Preview

At this point clicking on the preview the result of the overview has this aspect.



Preview's menus

Nodes

Nodes	
Border Width	1.0
Border Color	custom [0,0... ...
Opacity	100.0
Per-Node Opacity	☐

Node Labels	
Show Labels	☑
Font	Arial 12 Plain ...
Proportional size	☑
Color	custom [0,0... ...
Shorten label	☐
Max characters	30
Outline size	0.0
Outline color	custom [25... ...
Outline opacity	80.0
Box	☐
Box color	parent ...
Box opacity	100.0

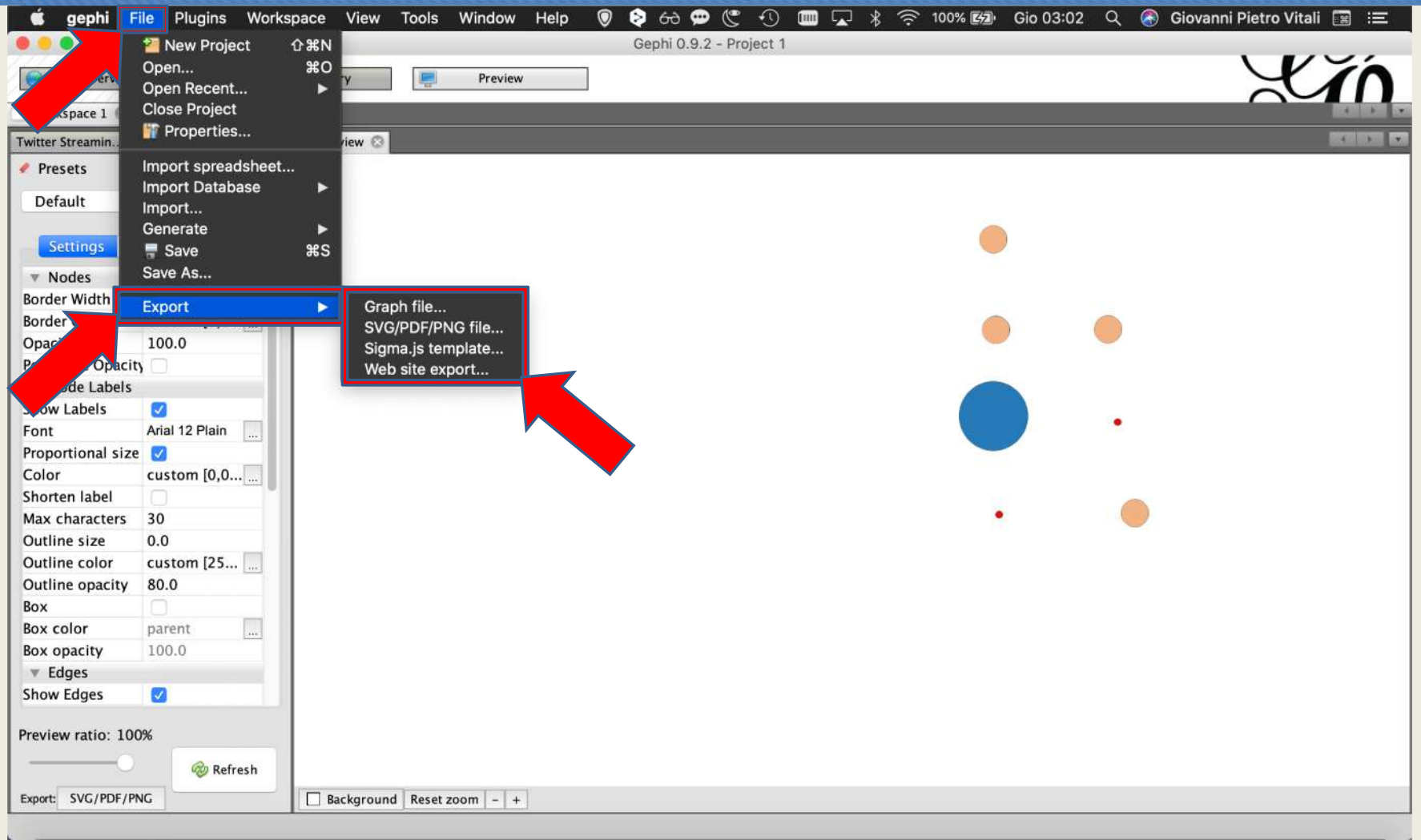
Edges

Edges	
Show Edges	☑
Thickness	10.0
Rescale weight	☑
Min. rescaled wei	10.0
Max. rescaled wei	100.0
Color	mixed ...
Opacity	100.0
Curved	☑
Radius	0.0

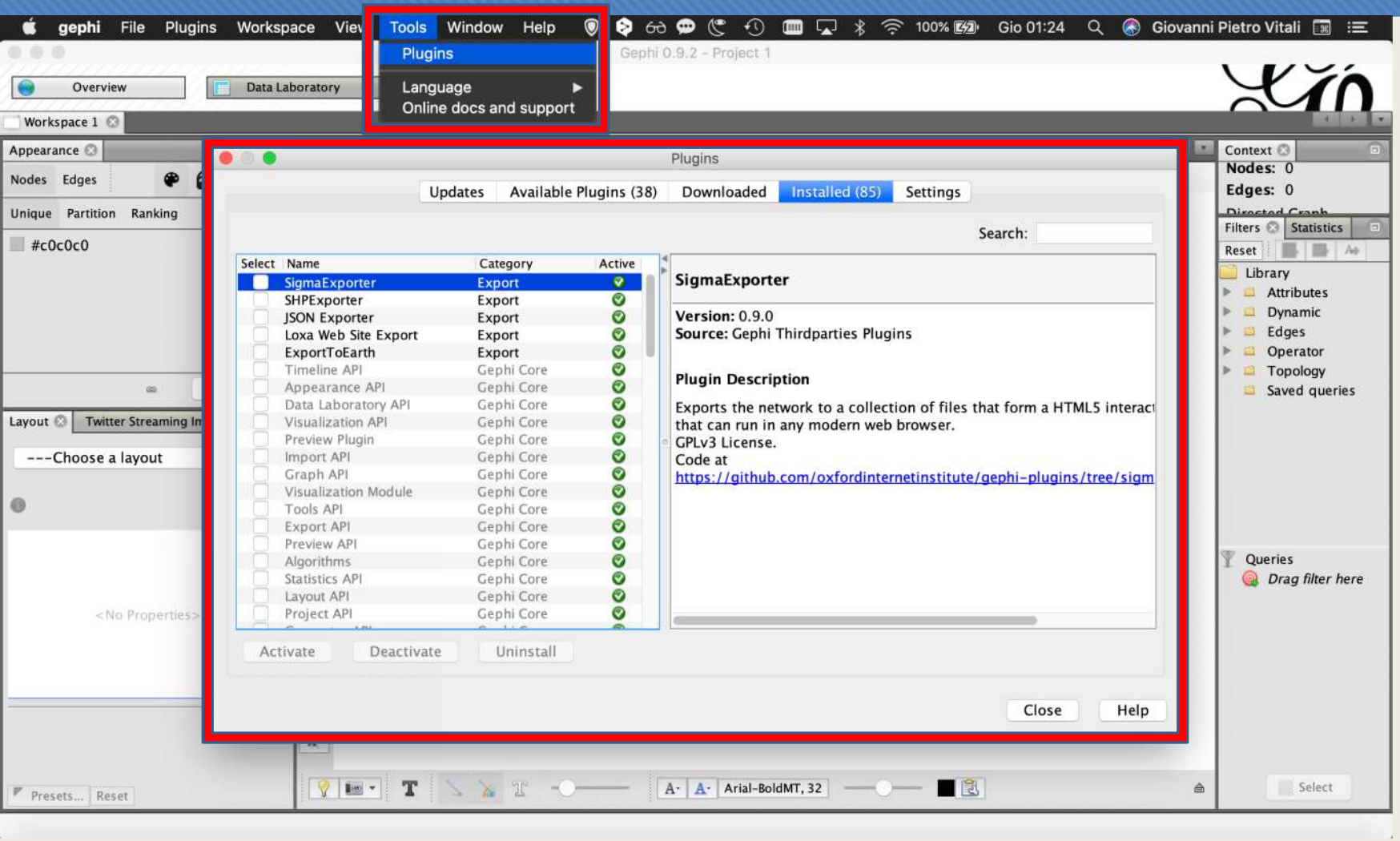
Edge Arrows	
Size	3.0

Edge Labels	
Show Labels	☐
Font	Arial 10 Plain ...
Color	original ...
Shorten label	☐
Max characters	30
Outline size	0.0
Outline color	custom [25... ...
Outline opacity	80.0

Export


gephi
File
Plugins
Workspace
View
Tools
Window
Help
Gio 03:02
Giovanni Pietro Vitali
Gephi 0.9.2 - Project 1
New Project ⇧⌘N
Open... ⌘O
Open Recent...
Close Project
Properties...
Import spreadsheet...
Import Database
Import...
Generate
Save ⌘S
Save As...
Export
Graph file...
SVG/PDF/PNG file...
Sigma.js template...
Web site export...
Preview
Presets
Default
Settings
Nodes
Border Width
Font
Arial 12 Plain
Proportional size
Color
Shorten label
Max characters
30
Outline size
0.0
Outline color
Outline opacity
80.0
Box
Box color
parent
Box opacity
100.0
Edges
Show Edges
Preview ratio: 100%
Refresh
Export:
SVG/PDF/PNG
Background
Reset zoom

Plugins



Layouts

- TwitterStreamingExporter
- Map of Countries
- Circular Layout
- MultiGravity Force Atlas 2
- GeoLayout

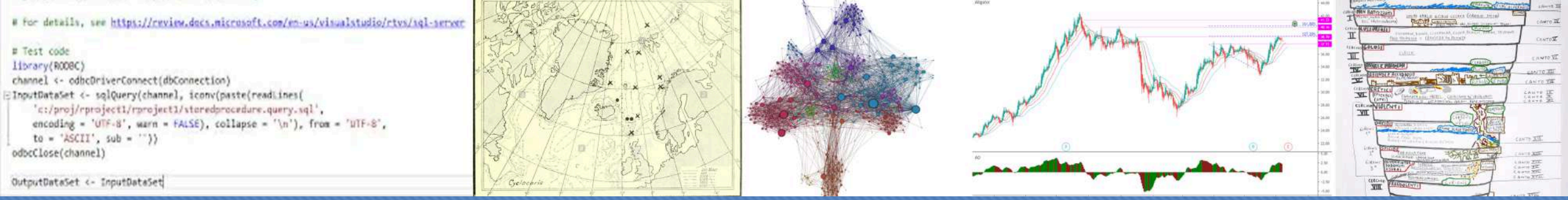
Exporters

- SigmaExporter
- SHPExporter
- JSON Exporter
- Loxa Web Site Export
- Export to Earth

Let's practice

Nodes: http://bit.ly/2MjTUd8

Edges: http://bit.ly/2VKPLCi



Gephi

_end

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