

ipysigma

a Jupyter widget for interactive visual network analysis

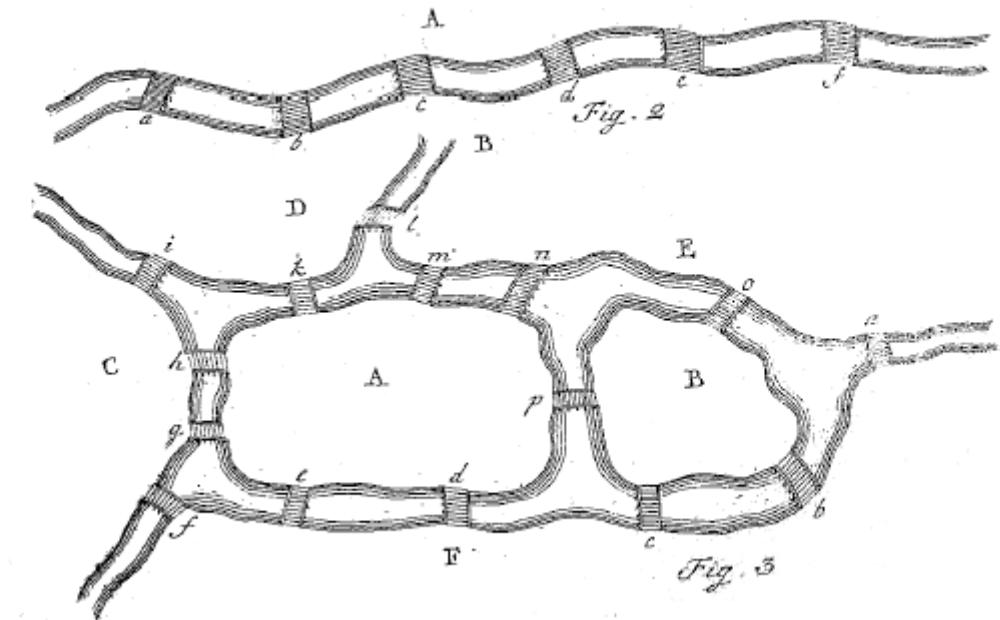
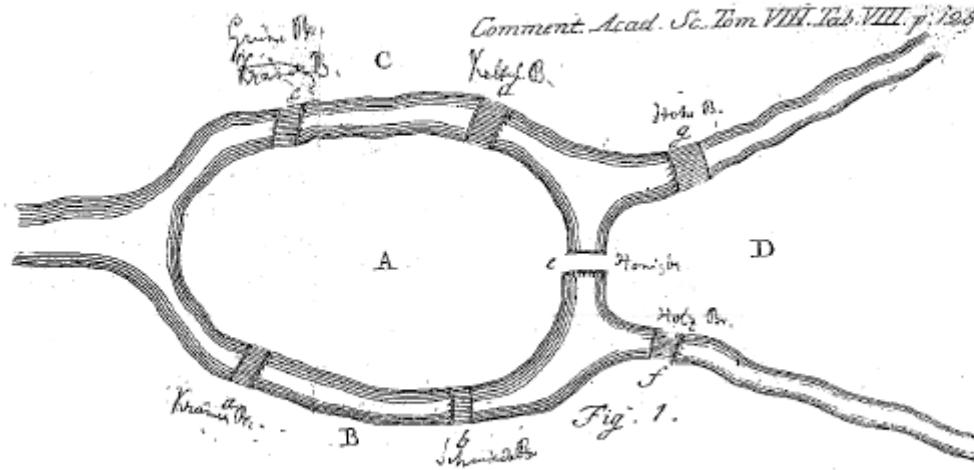
Graph devroom, FOSDEM 2023

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Special thanks to ✨Laura Miguel✨ for data collection and processing

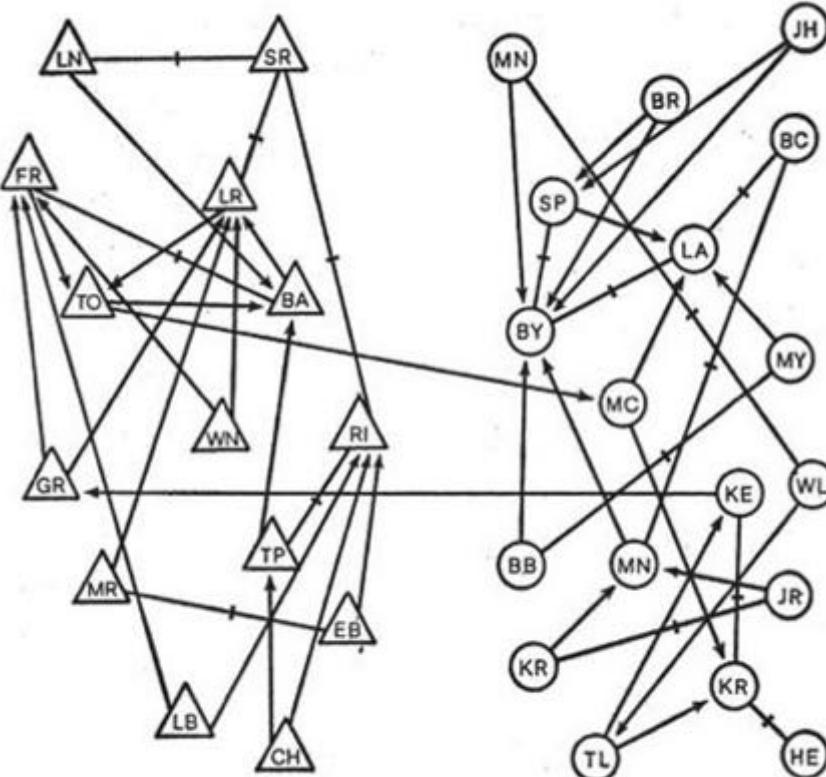
Visual Network Analysis: why & how

1736: Leonhard Euler & the 7 Bridges of Königsberg



1934: Jacob Levy Moreno's sociograms

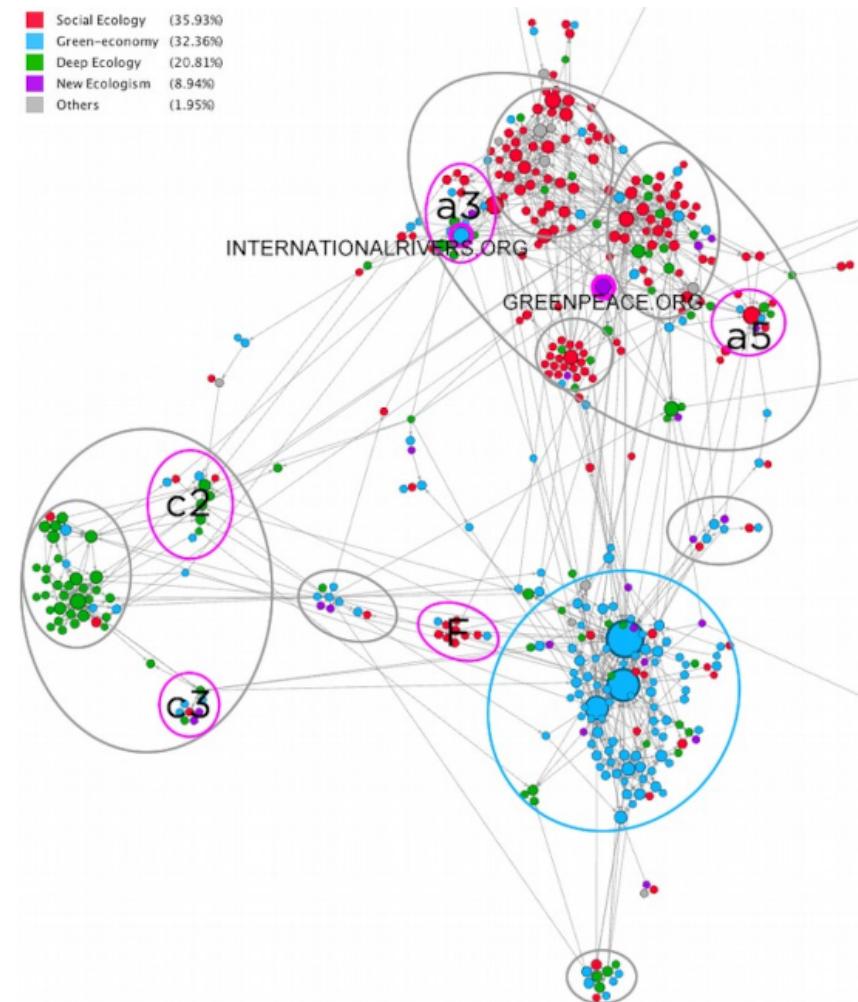
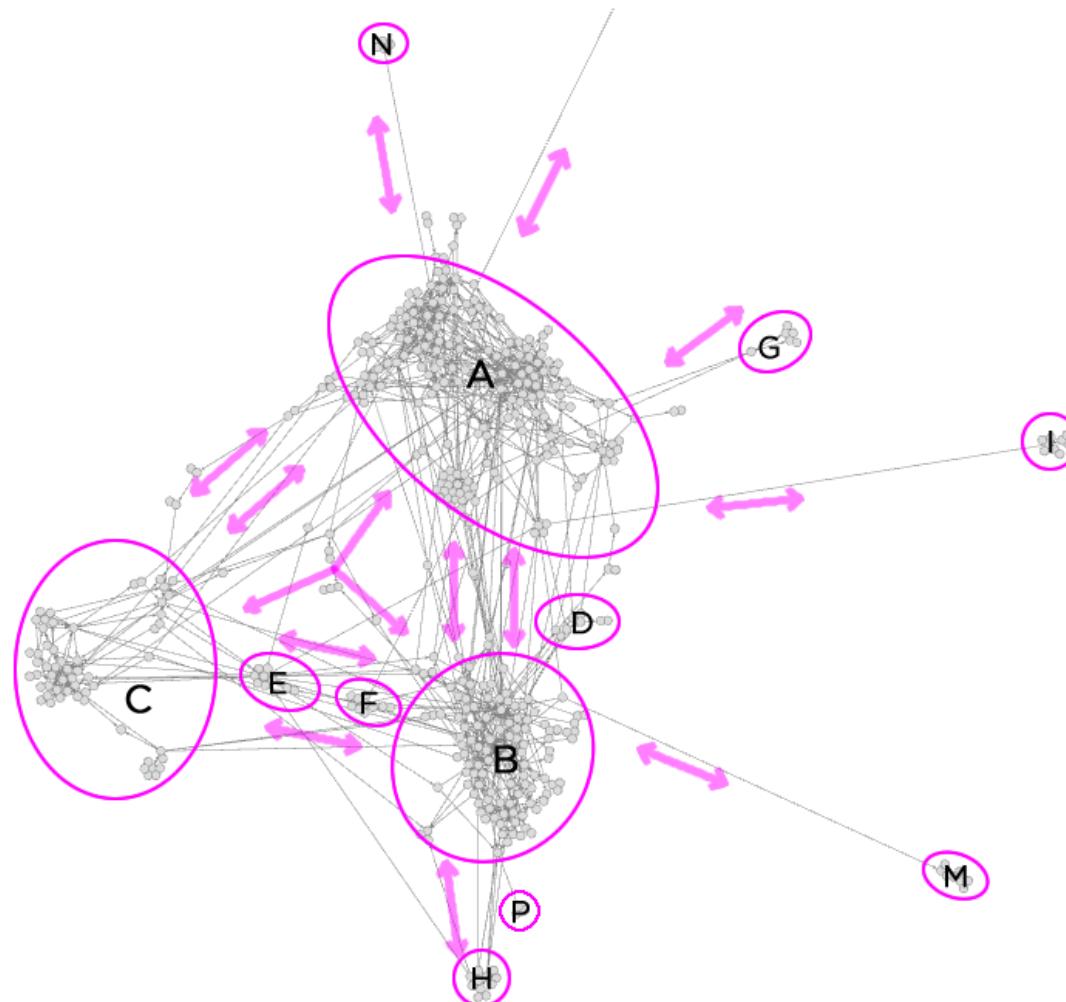
Sociogramme d'une classe d'élèves de 11-12 ans
(critère : s'asseoir à côté des élèves choisis – 2 choix au maximum)



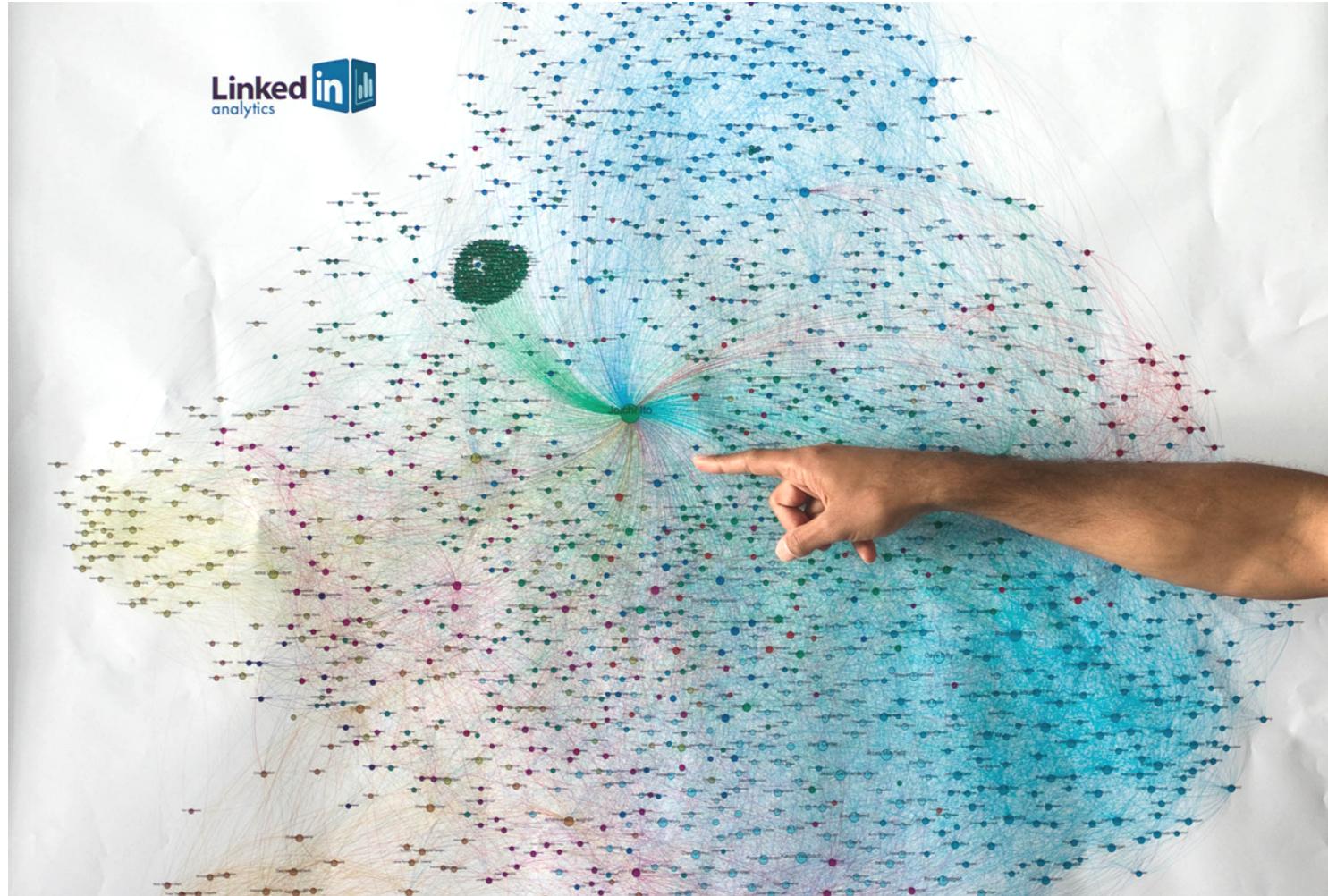
Les lignes barrees indiquent les choix réciproques.

Source : Moreno [1934, annexes, planche XII].

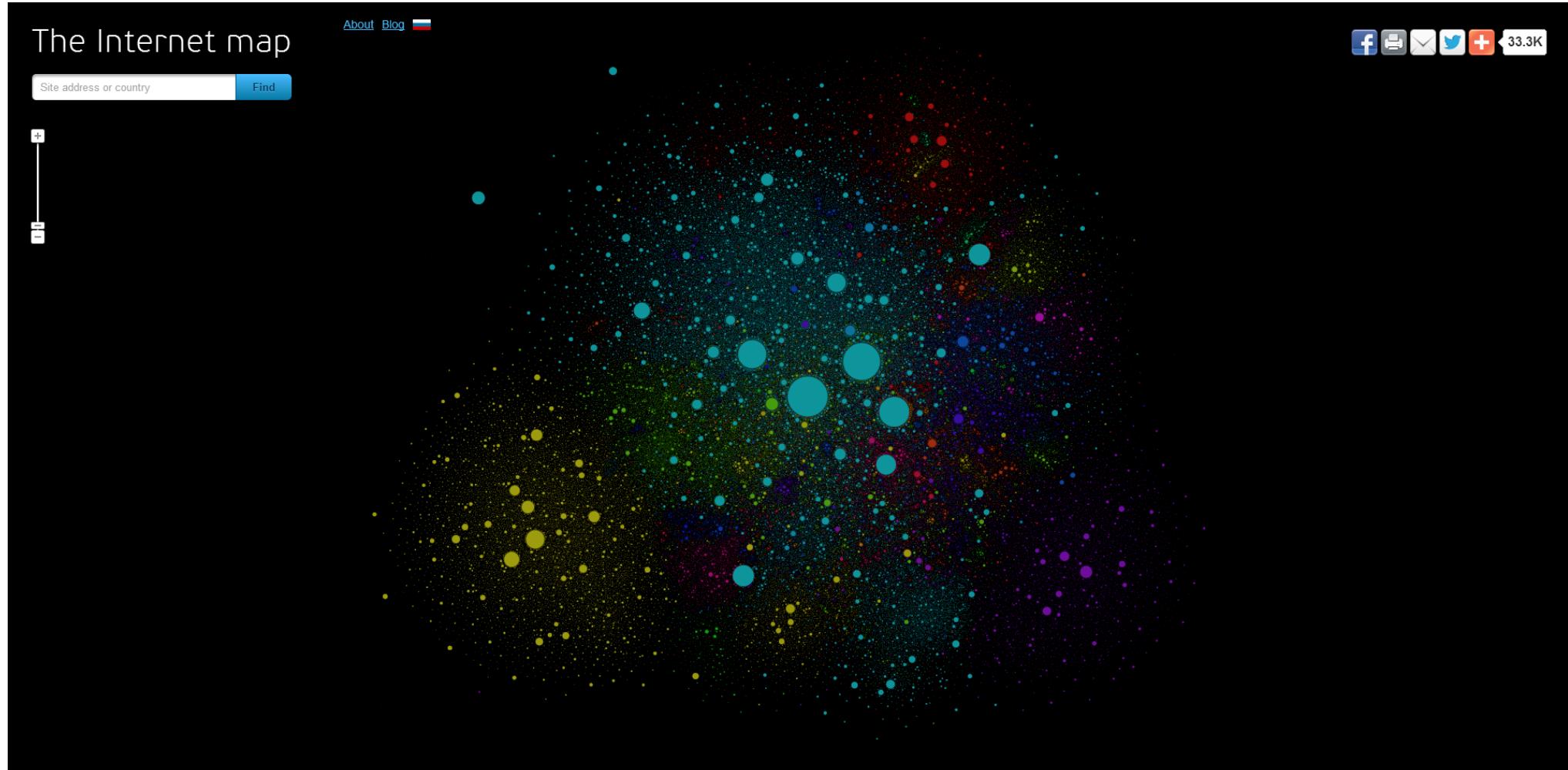
20th century: computer assisted layout & clustering



Graphs are like maps

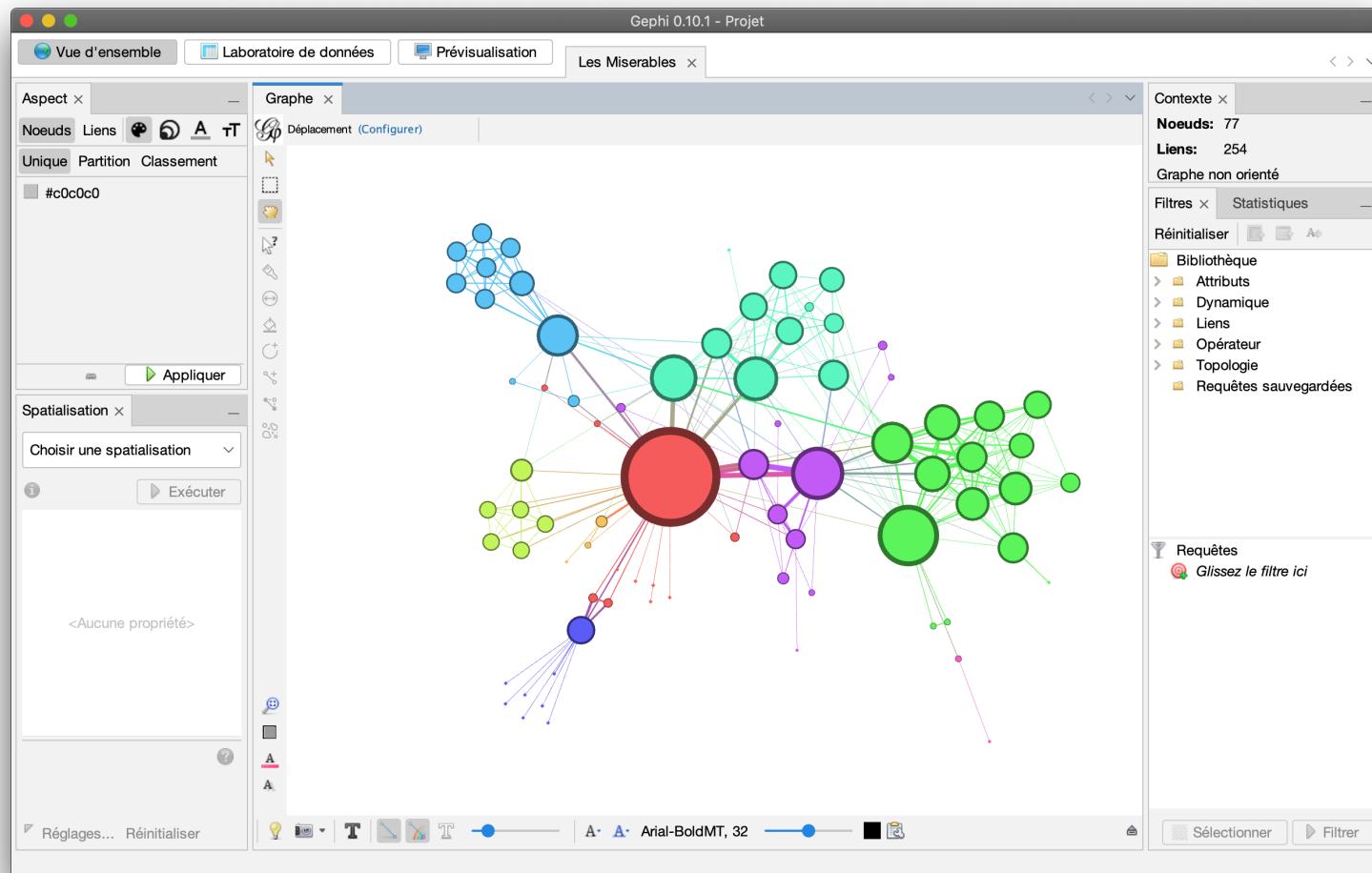


Graphs help us navigate and locate

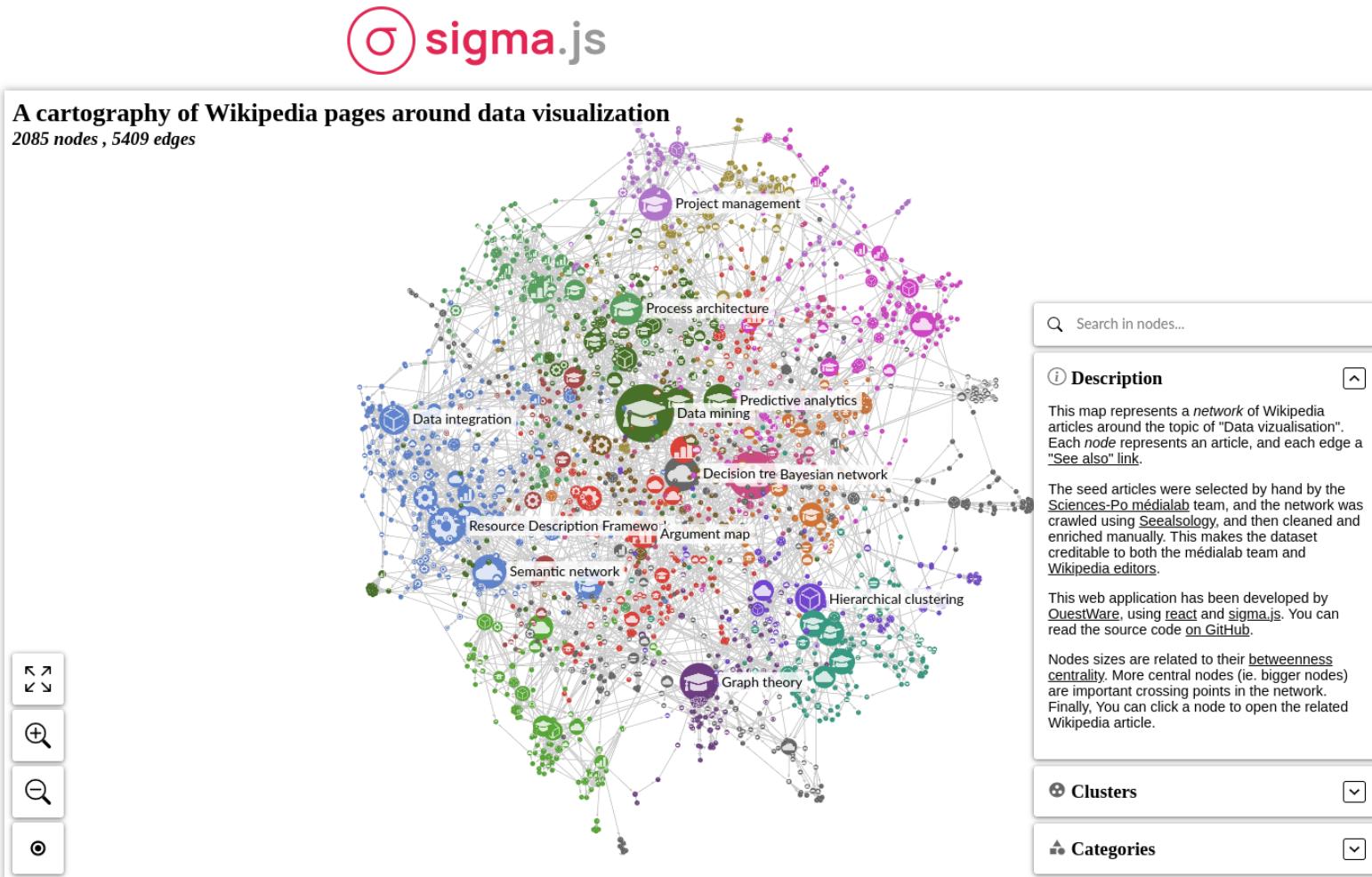


A brief history of interactive tools

For the desktop first, for instance Gephi



Then for the web, thanks to libs like Sigma.js



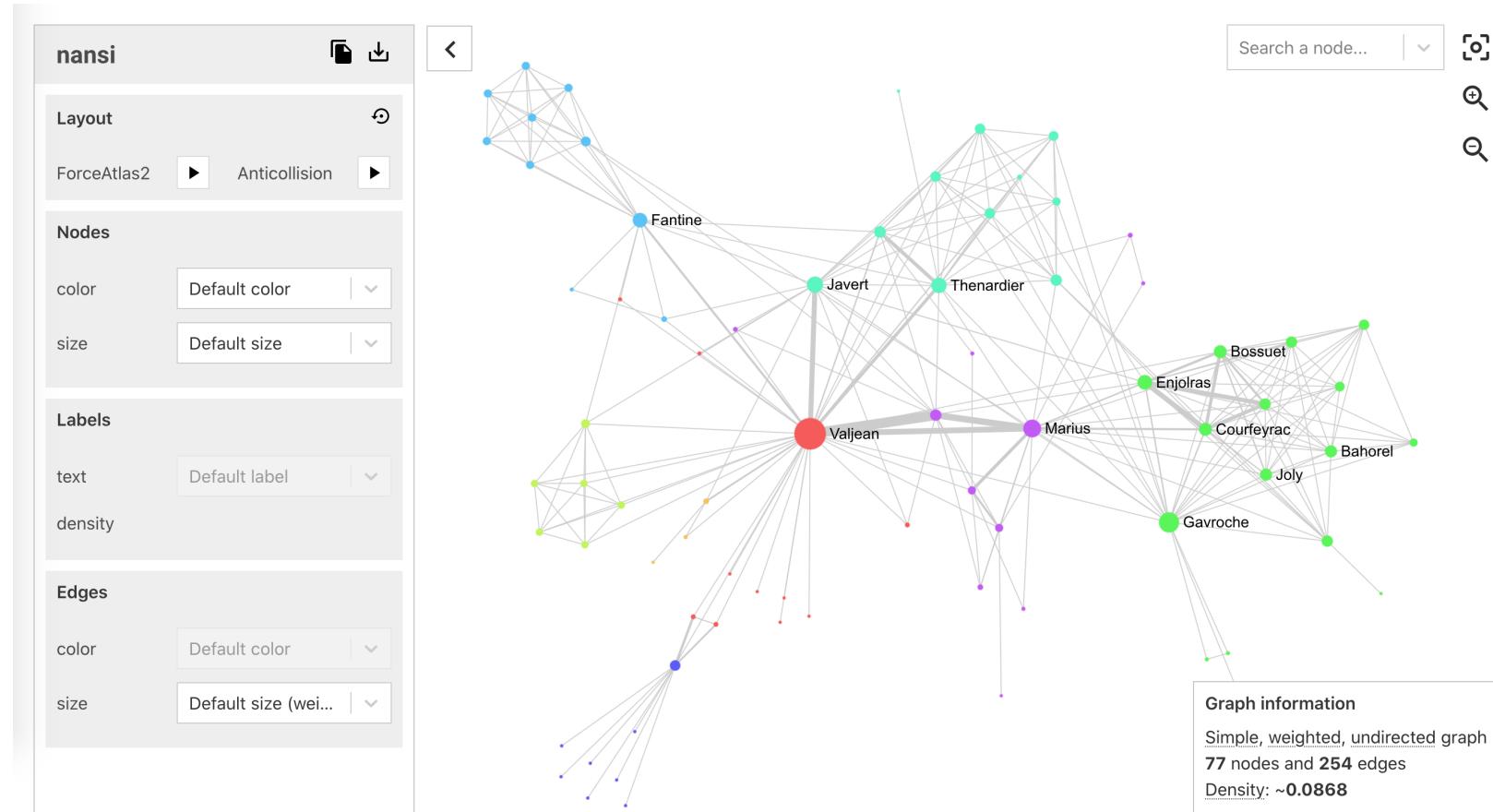
which enabled developing Gephi-like tools for the web

Like MinivaN, ...



which enabled developing Gephi-like tools for the web

Like MiniVaN, Nansi, ...



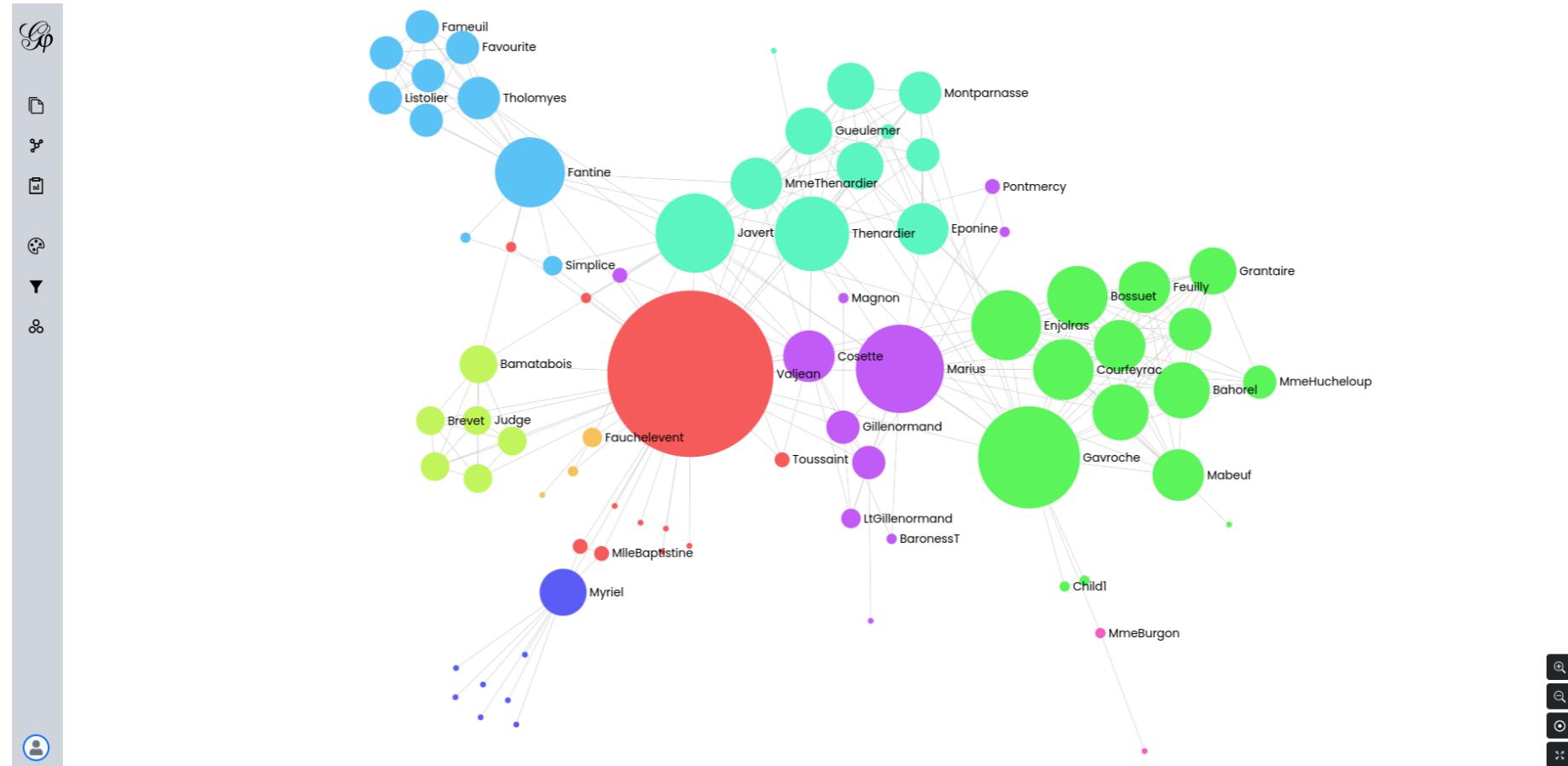
which enabled developing Gephi-like tools for the web

Like MiniVaN, Nansi, Retina, ...



which enabled developing Gephi-like tools for the web

Like MiniVan, Nansi, Retina, and soon Gephi-lite!



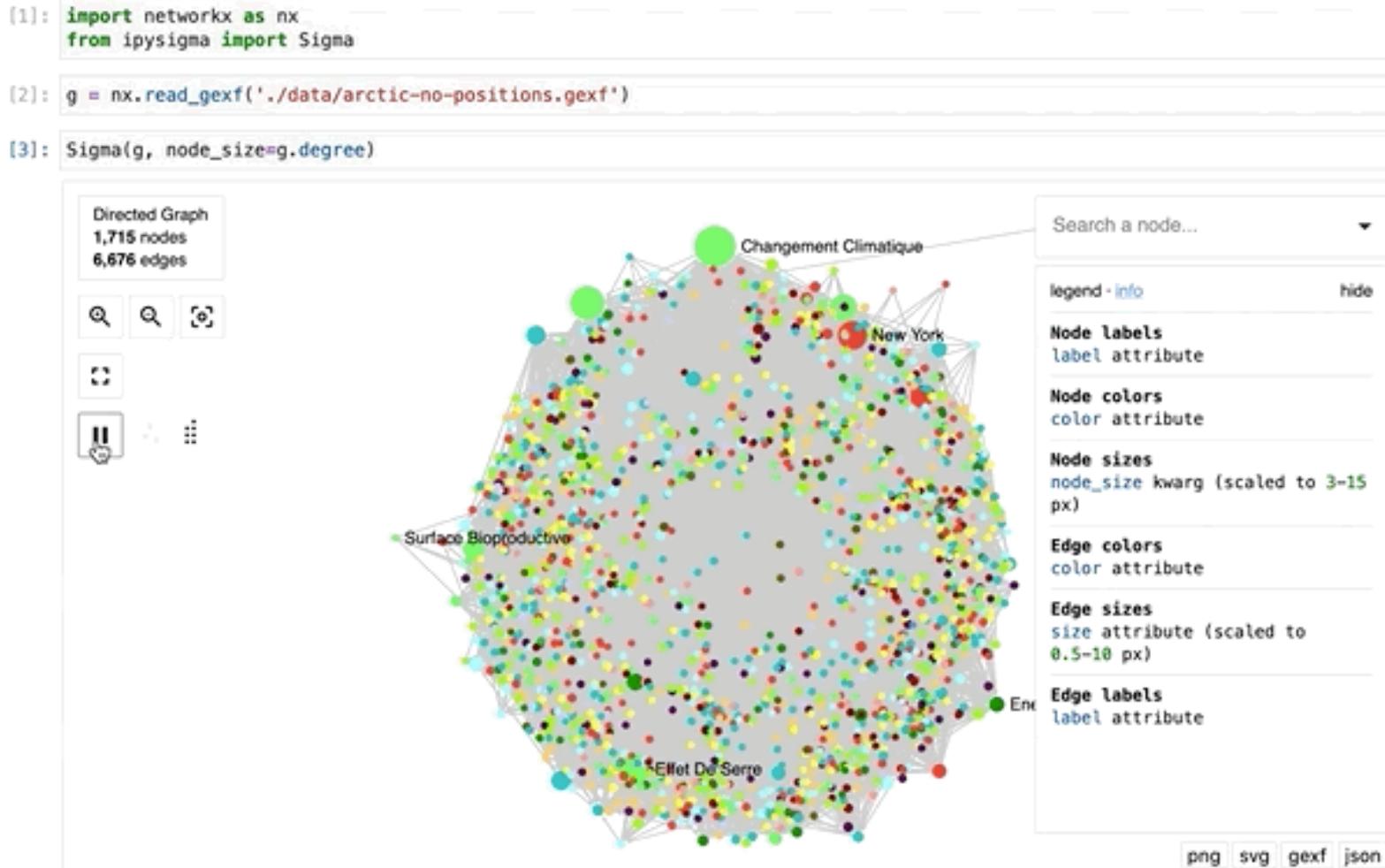
We now have many rich interactive tools allowing us to visualize, explore, manipulate and publish graphs.

But...

...all of them require pre-computed graphs (saved as GEXF, GraphML, JSON, etc.).

What if we want to juggle between building/coding our graph and quickly visualizing/exploring it interactively?

We can mix Jupyter notebooks and Sigma.js!



Let's play with it!

```
pip install jupyter  
pip install networkx      # or igraph  
pip install ipysigma
```