NodeTrix: a Hybrid Visualization of Social Networks

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Social Networks

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The Friends Wheel
What’s wrong with node-link diagrams?

- Overlapping nodes
- Edge crossings
What are the solutions?

- Sampling, filtering
- Clustering into meta-nodes
- Alternative representations such as adjacency matrices
What’s wrong with matrices?

- Use lot of space!
- Sparse for small-world networks
- Hard to perform path-following tasks
  [ghoniem et al. 2005]
- Not familiar to most users
Analyzing social networks

- Find communities
- Find central actors

[Auber et al. 2003]
What do we propose?

- DEMO
Visual representation

- Node-Link diagram with communities displayed as matrices
  - Implemented in the Infovis Toolkit

- Matrices
  - Adjustable level of details

- Inter-matrix edges
  - Underlying and/or aggregated
Interaction

- Direct manipulation
  - Moving a node
  - Moving a matrix
  - Grouping a set of nodes
  - Splitting a matrix
  - Drag and drop of nodes
  - Drag and drop of matrices
  - Drag and drop of axis elements
Animation

- Support understanding of node-link → matrix transitions
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Using NodeTrix

To interactively explore

1) Extract the communities from a node-link diagram or a matrix
2) Edit communities
3) Understand the role of actors

To communicate

1) Improves node-link intra-community readability
2) Improves matrix inter-community readability
3) Provides compact representations
Remaining issues

- NodeTrix works best with small-world networks
  - What about other types of network?

- It raises the “ambiguous clustering” problem
NodeTrix unleashed!


QUESTIONS?
You want to represent social networks but...

- You can’t read this?
- You can’t understand this?
Then, you want to see this!

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Simple...
Interactive...
Looks cool...

**LIVE DEMO**

If you’re nice, you’ll be able to try it...