

Egocentric Analysis of Dynamic Networks with EgoLines

Jian Zhao, Michael Glueck, Fanny Chevalier, Yanhong Wu, Azam Khan



Dynamic Networks



Time f . . .

2



Year I

Year 2





Node-link diagrams





Time

Animation



[van den Elzen et al., 2013]



Dynamic ego-network analysis questions

- Joining, leaving, and recurrence of a co-author?
- Connectivity to the focal author (ego)?
- Splitting and merging of co-author communities (clusters)?
- Stability of co-authorships?

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2nd level co-authors

Ist level co-authors

EgoLines

Dataset	visnchi_21 👻 J. Stasko	anchi_21 * J. Stasko egolines * × = Clusters * - 0 0 1991-2014 0 1-16						
	2003	2004	2005	2007	5008	2009	2010	
28475) 0000 0000		29958 PA 						

	Ego Name - id [Time Len]	Vertex Num
- anda	R.T. Whitaker-485 [10]	88
	T. Erickson-4261 [13]	
And the second second	J. Wood-285 [11]	
	J. Huang-1473 [13]	Bas Bass - Bass 6
	G. Scheuermann-836 [14]	
the state of the second	V. Pascucci-466 [17]	allba :
	Michael J. Muller-5277 [10]	6
	R.M. Kirby-486 [11]	 6
	X. Tricoche-524 [10]	 0 00 7
	R 1 K Jacob 2051 [11]	_

[go Name - id [Time Len]	Vertex Num	🍦 Edge Num 🔶	Edge-Vertex Ratio 🛛 🔻
Whitaker-485 [10]	• • • • • • • • • • • • • • • • • • •		i dii diin aa 1.93
ickson-4261 [13]		13.92	0
ood-285 [11]		21.36	0
ang-1473 [13]	Bas Base auBase 6.23	B 14.15	La 1.84
heuermann-836 [14]			8.1 - Ballaller 1.83
scucci-466 [17]	 	 20.41	and the allocality 1.82
ael J. Muller-5277 [10]	6.40	14.40	00 0 a 00 a0 1.81
Kirby-486 [11]		14.91	
icoche-524 [10]	7.60	B B 18.40	 1.80
In the DOLL LAD			

Search:

Controlled user study

• 18 participants

• 13 males and 5 females

• 13 analytical tasks (2 categories)

• Temporal analysis, topological analysis

• 3 techniques

• EgoLines (EL), node-links (NL), small multiples (SM)

• I dataset

• IEEE VIS conferences co-authorship networks

Small multiples (SM)

Main take-away

Limitations and future work

- More effective overview
 - Reduce visual clutter
- Handle larger ego-networks
 - Multi-scale aggregation of lines
- More experiments
 - On other datasets and applications
 - Shed light on facilitating the bridges-finding task

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