Social Networks

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Visualizing Social Groups Linton C. Freeman, American Statistical Association, 1999 Proceedings of the Section on Statistical Graphics, 2000, 47-54.

Social Network Fragments Chap 7, danah boyd MS Thesis "Faceted Id/entity: Managing representation in a digital world"

Vizster: Visualizing Online Social Networks. Jeffrey Heer and danah boyd. InfoVis 2005.

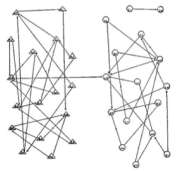
using images to visualize social patterning

on or **off** relationship

	I1	W1	W2	W3	W4	W5	W6	W7	W8	W9	S1	S4
	1	2	3	4	5	6	7	8	9	1	4	
I1	0	1	1	1	1	0	0	0	0	0	0	0
W1	1	0	1	1	1	1	0	0	0	0	1	0
W2	1	1	0	1	1	0	0	0	0	0	1	0
W3	1	1	1	0	1	1	0	0	0	0	1	0
W4	1	1	1	1	0	1	0	0	0	0	1	0
W5	0	1	0	1	1	0	0	1	0	0	1	0
W6	0	0	0	0	0	0	0	1	1	1	0	0
W7	0	0	0	0	0	1	1	0	1	1	0	1
W8	0	0	0	0	0	0	1	1	0	1	0	1
W9	0	0	0	0	0	0	1	1	1	0	0	1
S1	0	1	1	1	1	1	0	0	0	0	0	0
S4	0	0	0	0	0	0	0	1	1	1	0	0

Table 1. Game Playing at Western Electric

ad-hoc node placement



multi-dimensional scaling

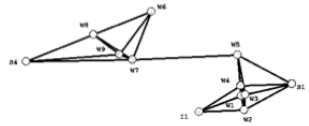


Figure 2. MDS of Game Playing at Western Electric (Raw Data).

singular value decomposition

all variance in first few variables

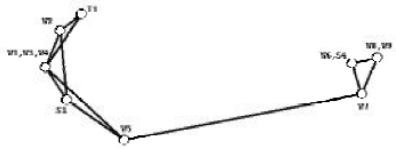


Figure 3. SVD of Game Playing at Western Electric.

maximal complete graph

Galois Lattices

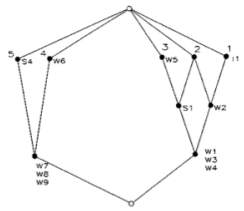


Figure 4. Galois Lattice of the Western Electric Cliques.

use quantity to identify groups

dolphins swimming together

	a	b	c	d	e	f	g	h	i	j	k	l	m
a	12	12	8	7	7	4	7	4	0	0	0	0	0
b	12	12	8	7	7	4	7	4	0	0	0	0	0
c	8	8	24	23	18	3	5	3	0	0	0	0	0
d	7	7	23	26	19	2	4	2	0	0	0	0	0
e	7	7	18	19	20	3	5	3	0	0	0	0	0
f	4	4	3	2	3	21	20	21	0	0	0	0	0
g	7	7	5	4	5	20	23	20	0	0	0	0	0
h	4	4	3	2	3	21	20	21	0	0	0	0	0
i	0	0	0	0	0	0	0	0	31	26	0	0	0
j	0	0	0	0	0	0	0	0	26	28	0	0	0
k	0	0	0	0	0	0	0	0	0	0	35	31	24
l	0	0	0	0	0	0	0	0	0	0	31	31	22
m	0	0	0	0	0	0	0	0	0	0	24	22	25

can still apply MDS and SVD

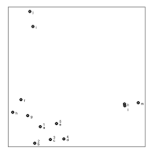


Figure 5. Two Dimensional MDS

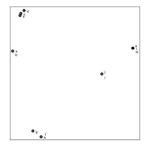


Figure 6. Two Dimensional SVD

groups

genetic algorithm

add complexity for display, navigation

improve link representation

Pros:

good walkthrough

simple datasets

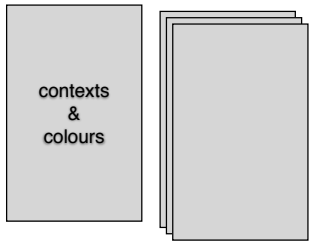
Cons:

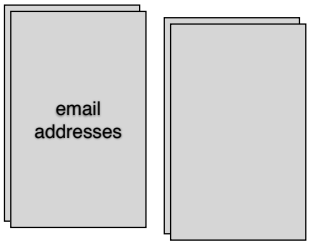
poor transitions between topics

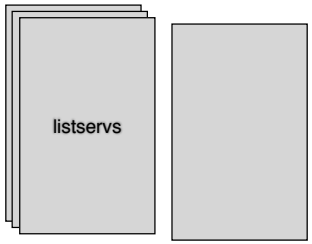
questions?

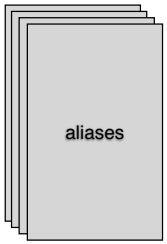
visualize email social networks

users supply their mail spool and 4 files









not binary

knowledge: A → B

awareness: B ↩ A

weak awareness: B ll C

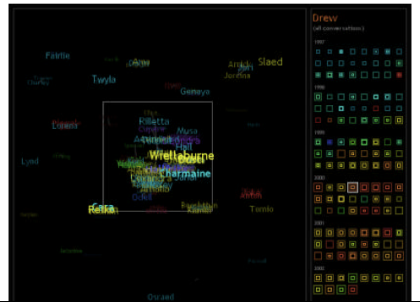
list awareness: {B, C,…}

trusted: A → B_{BCC}

matrix of tie strengths

spring system

spring system



informal study

lots!

tie strength by volume misleading

layout artifacts (‘fake’ proximity)

Pros:

easy to follow

self-critique

Cons:

layout issue **really** bad

questions?

visualize Friend**ster**

lots of data, no way to see it

imagery is central

“start with what you know, then grow”

spring-based layout

informal

techies

Pros:

tool uses real data

Cons:

not a lot more info on algorithm

no controlled study

questions?

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