



# CS 4803 Social Computing: Social Network Structure II

*Munmun De Choudhury*

[munmund@gatech.edu](mailto:munmund@gatech.edu)

Week 8 | October 5, 2014

- Frigyes Karinthy in 1929 published a volume of short stories called “Everything is Different”
- He was the first proponent of the six degrees of separation concept, in his 1929 short story, Chains (Láncszemek)
- In his book the characters created a game out of the notion that “the world is shrinking”:

A fascinating game grew out of this discussion. One of us suggested performing the following experiment to prove that the population of the Earth is closer together now than they have ever been before. We should select any person from the 1.5 billion inhabitants of the Earth – anyone, anywhere at all. He bet us that, using no more than *five* individuals, one of whom is a personal acquaintance, he could contact the selected individual using nothing except the network of personal acquaintances

# Planetary Scale View on a Large Instant Messaging Network

# Summary

- One of the first online studies of the small world phenomenon.
- Also the largest social network analyzed at that time: 180 million nodes and 1.3 billion edges.
- Instant messenger interactions showed stronger correlation over age and demographics.
- However interactions between opposite gender were more frequent and longer.
- Countries with historic and ethnic relationships showed stronger interaction patterns.
- Findings validate Milgram's theory: it is found that individuals in the network are on an average 6.6 hops apart.

The Political  
Blogosphere and the  
2004 U.S. Election:  
Divided They Blog

# Summary

- First analysis of politics and elections on social media.
- 2004 Presidential elections were studied over blogs, particularly 4 A-list bloggers, over a two month period before elections.
  - 12470 posts from the left, and 10414 posts from the right
- Findings:
  - Conservatives and liberals were situated in contrastingly different and disconnected communities.
  - Difference was observed in terms of the news and other external content shared.
  - Conservative blogs were more tightly knit, in terms of links cited.
  - Liberals had stronger reciprocal connections.
  - Conservative blogs occasionally linked to liberal blogs whereas the reverse was not true.
  - Analysis of blog comments indicated stronger association within communities than between communities.

# You Reflections

Leskovec and Horvitz found that 99.9% of the nodes in the graph of Live Messenger conversations were connected. Why do you think this was the case? Are Twitter or Facebook likely to be different?



Adamic and Glance only analyzed a handful of political bloggers. Would results differ for regular social media users?

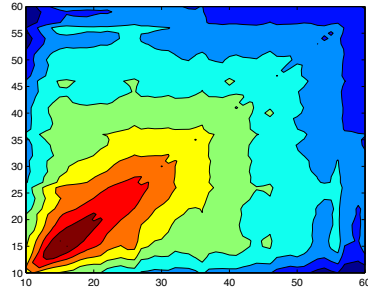
Adamic and Glance only analyzed connections between conservatives and liberals. Could semantic analysis of blog content revealed something different?

Adamic and Glance only analyzed connections between conservatives and liberals. No consideration was made of the signed nature of ties. How would you use this concept on the political domain?

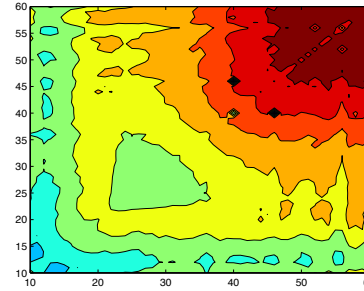
Adamic and Glance also found that conservatives linked more to each other and in a denser pattern than the liberals. Would you expect these patterns to generalize to social media and to today's political climate?

On a related note, Adamic and Glance found both conservative and liberal communities to act as mild echo chambers. How do you see this playing out in today's social media?

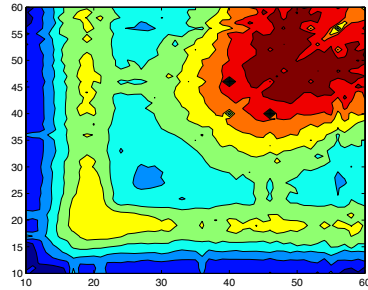
What about the “other” (independent or moderate) political blogs?



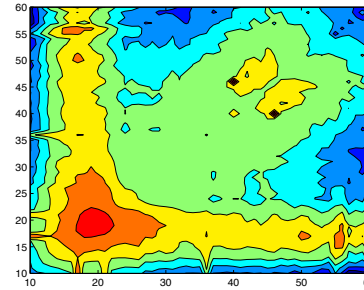
(a) Number of conversations



(b) Conversation duration

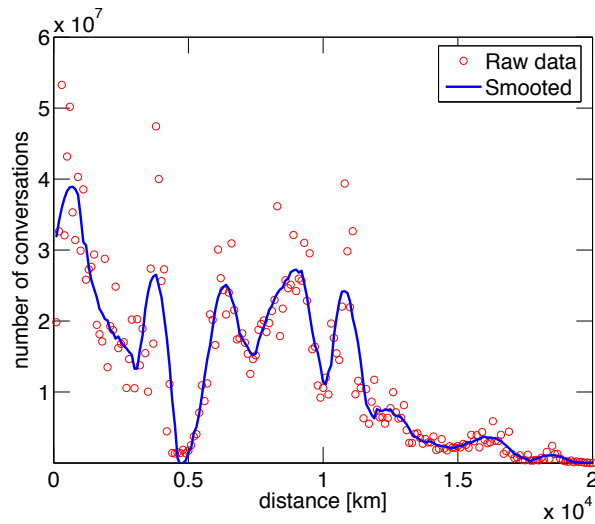


(c) Messages per conversation

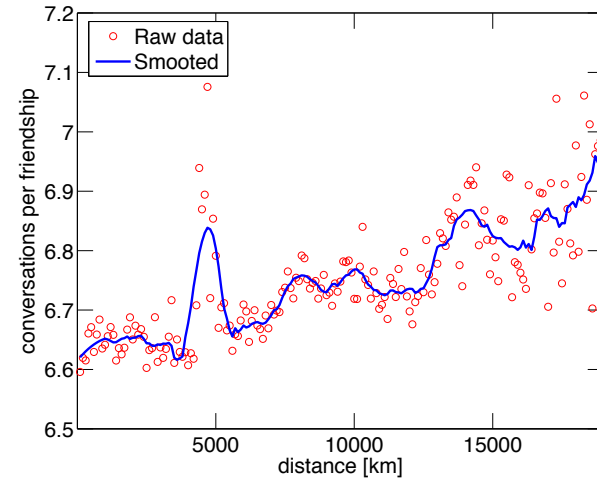


(d) Messages per unit time

Would these patterns be prevalent in social media e.g., Twitter conversations too?



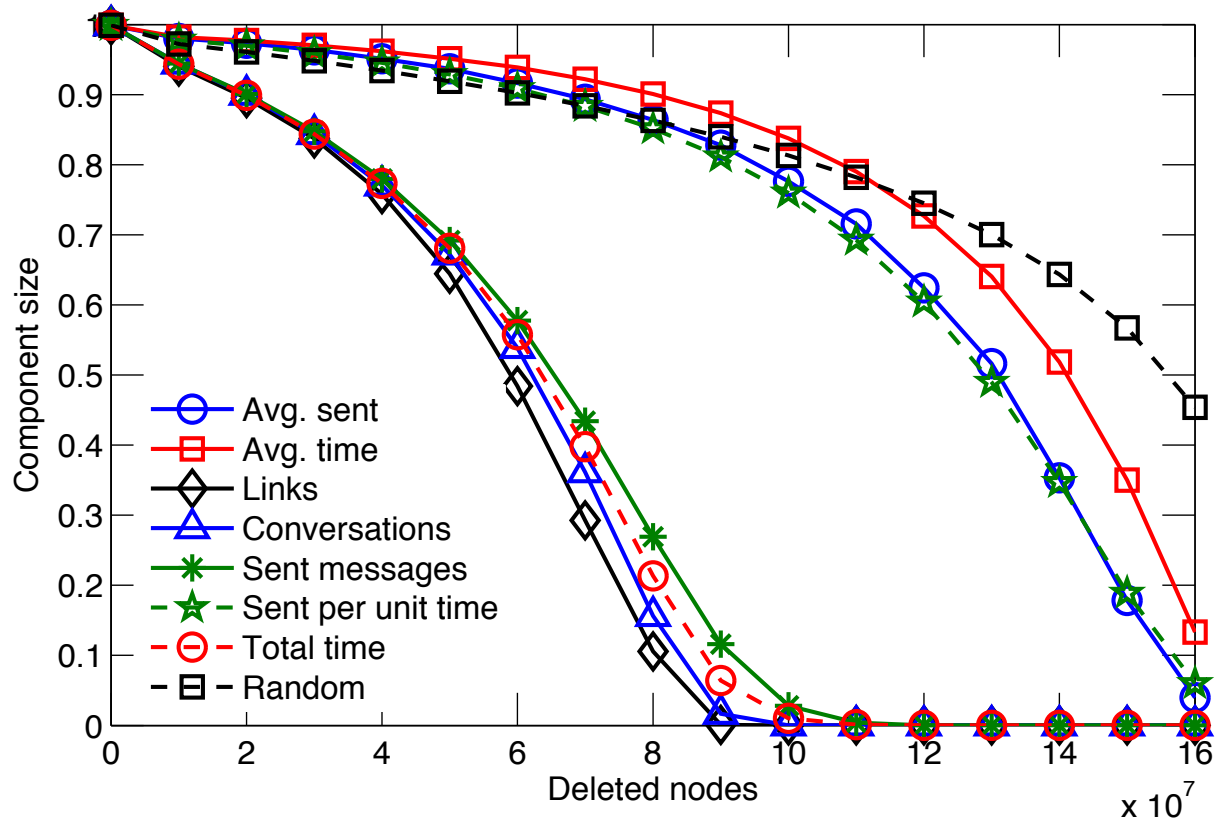
(a) Number of conversations



(b) Conversations per link

Does distance *still* matter?





Equivalent to the above graph, what measures of engagement on Facebook or Twitter do you think hold the network together?