

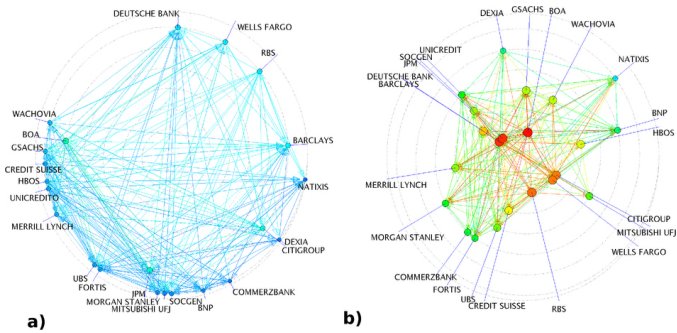
CS 103: Networks Wrap-Up and Review

Dan Sheldon
Fall 2015

Course Goals

- Network thinking. Networks are everywhere. Help you understand the world
- Network models. Tools to help you understand world through the lens of networks

Example: Financial Contagion



Slide credit: Jure Leskovec

Social Contagion

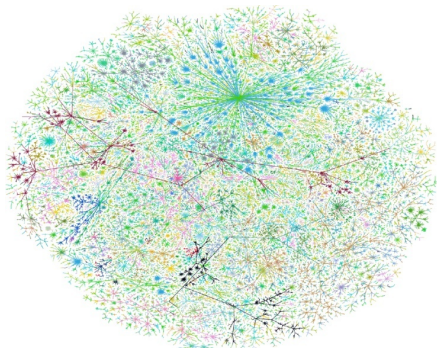


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4

Technology Contagion



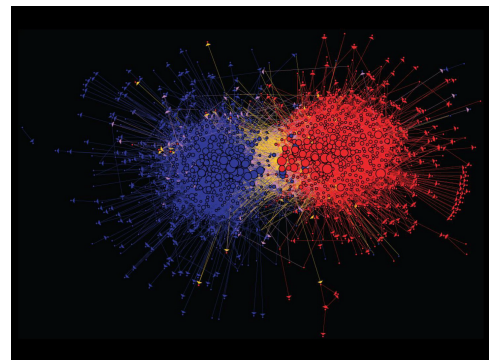
Graph of the Internet
(Autonomous Systems)

12/15/15

Slide credit: Jure Leskovec

5

Diffusion of Ideas



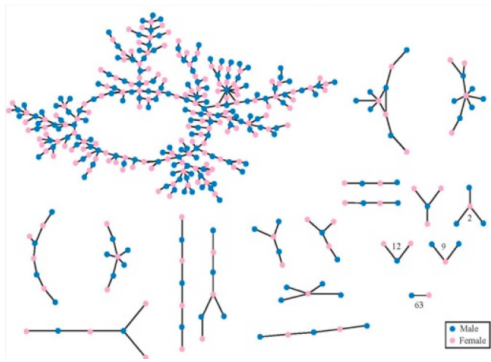
Connections between political blogs

12/15/15

Slide credit: Jure Leskovec

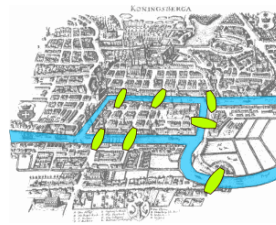
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Disease Spread



Human relationship network

Transportation Networks



Bridges of Königsberg



London Underground

- Human mobility and effect of transportation networks on spread of disease

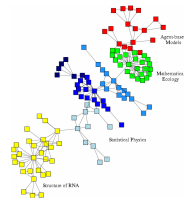
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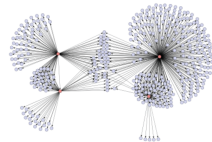
8

Networks and Society

- Networks reflect society
- But they also shape society
 - Maintain weak ties
 - Power of crowd. Online labor. Crowdsourcing. Crowd funding
 - Political mobilization
 - Democratization of news



- The future. How can we design networks to improve discourse and communication?



- Network thinking!

Thank you!

- Please fill out course evals... **honest** feedback appreciated!

Final Exam

- 10 questions
- Similar to midterm and HW
- **Closed book**
- 2 pages of notes allowed
- HW 5 back today. HW 6 available at 3pm. Solutions will be posted.

Exam Topics

- Graph theory
- Strong and weak ties
- Game theory
- Directed graphs and structure of the web
- Link analysis and PageRank
- Sponsored search markets
- Small world phenomenon
- Popularity and power laws
- Diffusion of innovation. Threshold contagion
- **Questions?**