



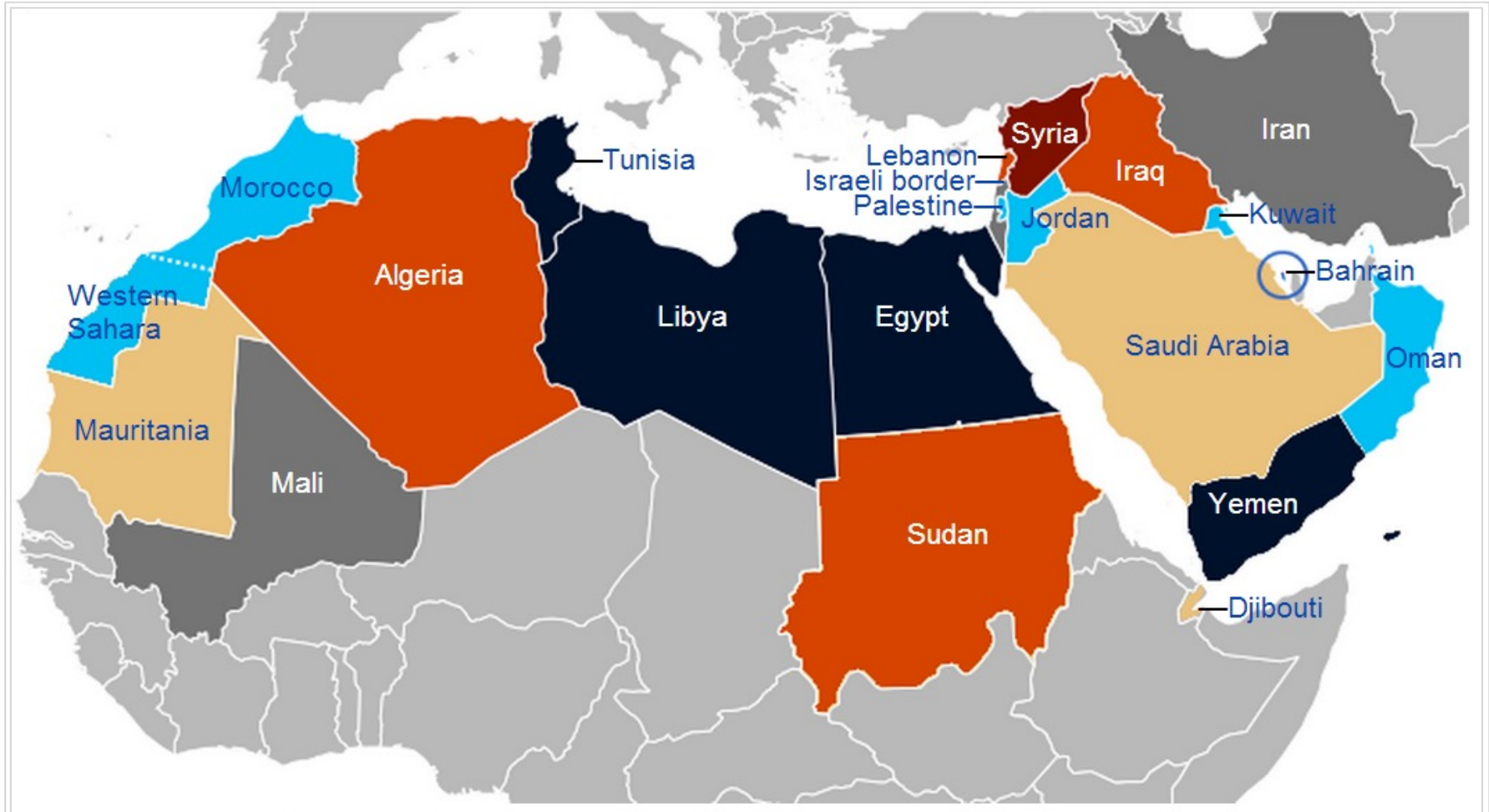
DCS/CSCI 2350: Social and Economic Networks

www.mtirfan.com/DCS-2350

Mohammad T. Irfan

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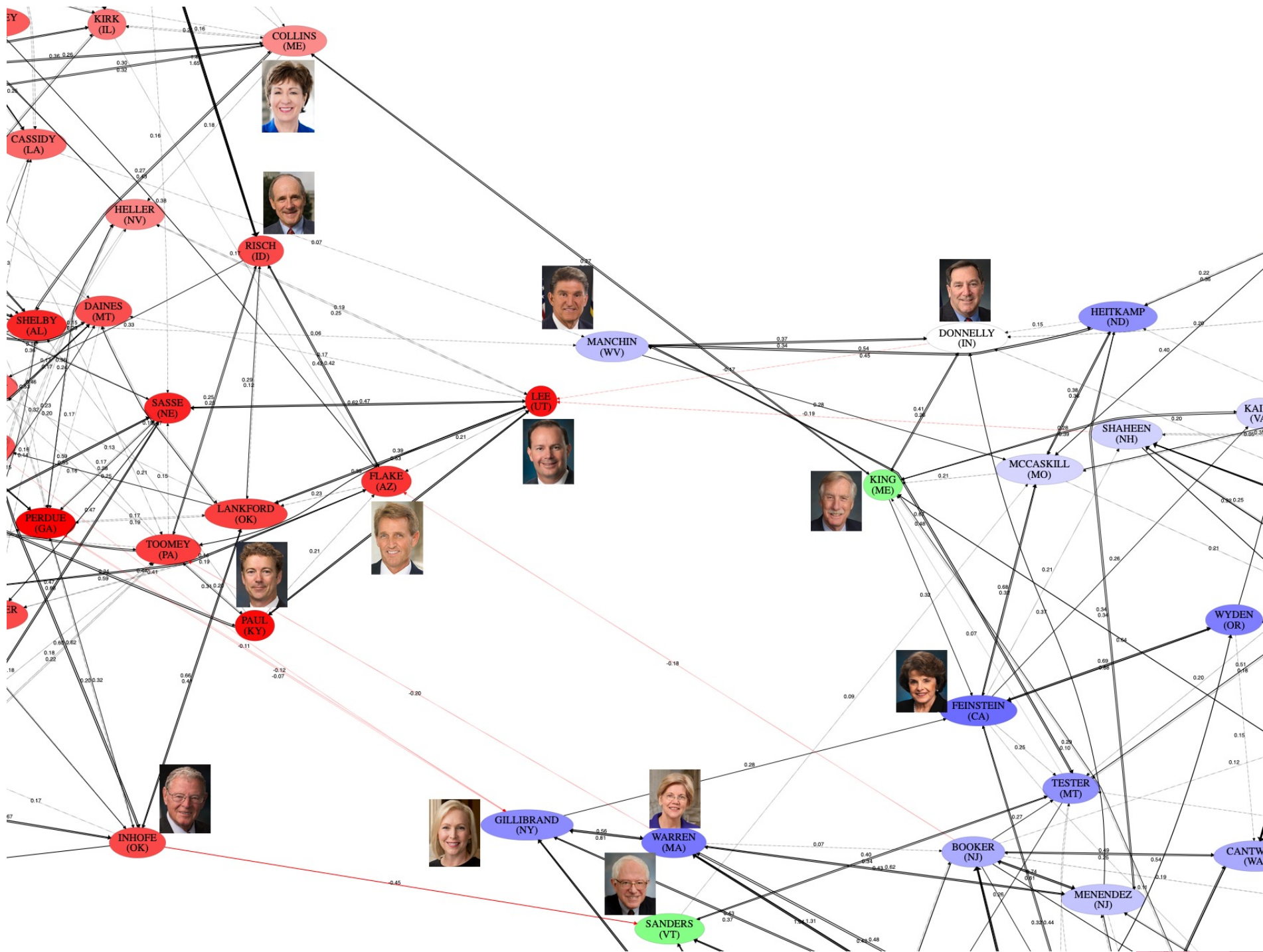
Web: www.mtirfan.com



- Government overthrown
 Civil war
 Protests and governmental changes
- Sustained civil disorder and governmental changes (Bahrain)
- Major protests
 Minor protests
 Related crises outside the Arab world

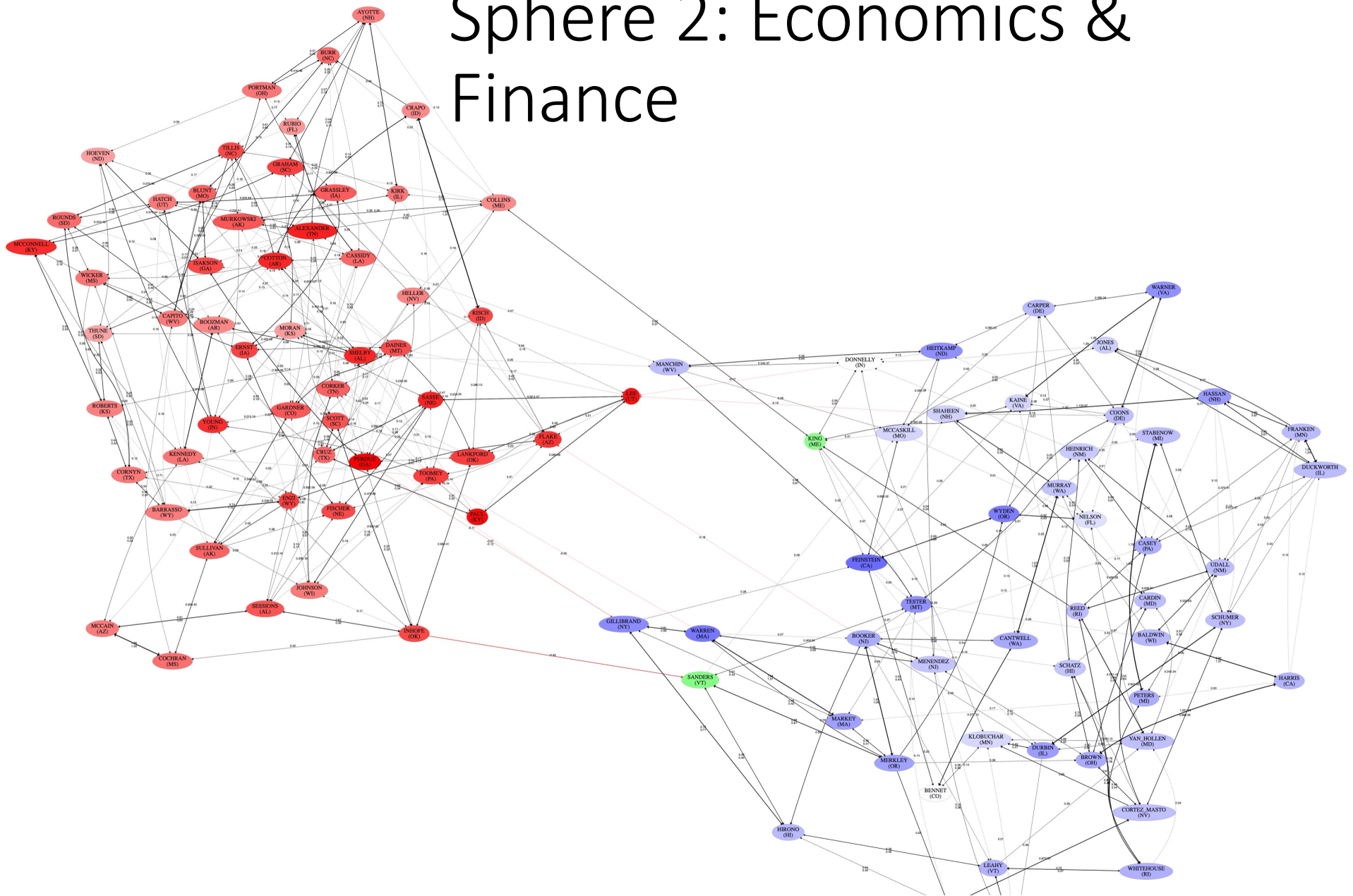
About myself





Sphere 1: Sec Armed Force

Sphere 2: Economics & Finance



Bowdoin Effort Earns Top Award at International Computer Science Conference Archives

July 31, 2018 by Tom Porter

Best Paper Award
AAMAS 2018, Sweden
(# submissions: 607,
acceptance rate 25%)



Professor Mohammad Irfan, in the middle, receives the Best Paper Award from AAMAS Program Chairs Gita Sukthankar (L) and Mehdi Dastani (R).

A research paper coauthored by a Bowdoin professor and one of his former students has earned the top spot at a recent computer science conference in Sweden. The paper employs computational game theory to model and predict congressional voting patterns. It was written by Assistant Professor of Digital and Computational Studies and Computer Science Mohammad Irfan and Tucker Gordon '17,

Best Paper Runner-Up Award
AAMAS 2024, New Zealand
(# submissions: 1,113, acceptance rate 20%)



How Does Our Social Network Influence Our Behavioral Choices?

“No man is an island” wrote the poet John Donne in 1624, meaning whether we like it or not, we are all connected. It’s an assertion that rings truer than ever in today’s networked world, and it’s a central theme of the research currently being done by computer scientist Mohammad Irfan and his colleagues.

NSF Core Research Grant

Professor of Digital and Computational and Computer Science (CS) Irfan secured around half a million dollars for an exciting multiyear research project studying human interactions in social networks. The research could have implications for many fields, he says, from public health to energy pricing to finance to the analysis of congressional voting patterns.

The award was made by the National Science Foundation (NSF) and done in collaboration with Luis E. Ortiz of the University of Michigan—Dearborn, for a multiyear research initiative. It’s all part of a core NSF program called Information and Intelligent Systems, says Irfan, who is the project director (while Bowdoin is the lead organization.)



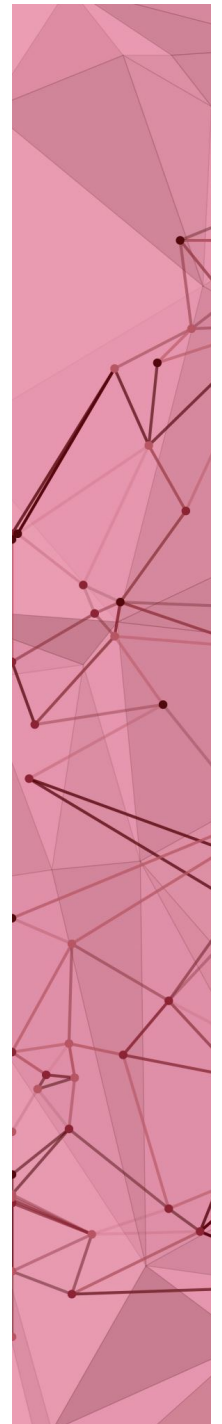
Contagion Class Turns Out to Be Prescient

Last summer, when Mohammad Irfan began planning for his new digital and computational studies class, Contagion, he had no inkling of just how relevant the subject matter would become.

Contagion Course
Spring 2020



Assistant Professor of Digital and Computational Studies and Computer Science Mohammad Irfan.



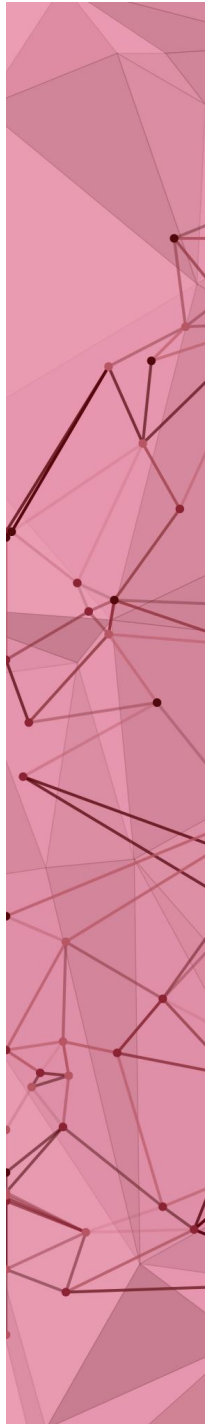


About You

Syllabus and required background

Course website:

www.mtirfan.com/DCS-2350



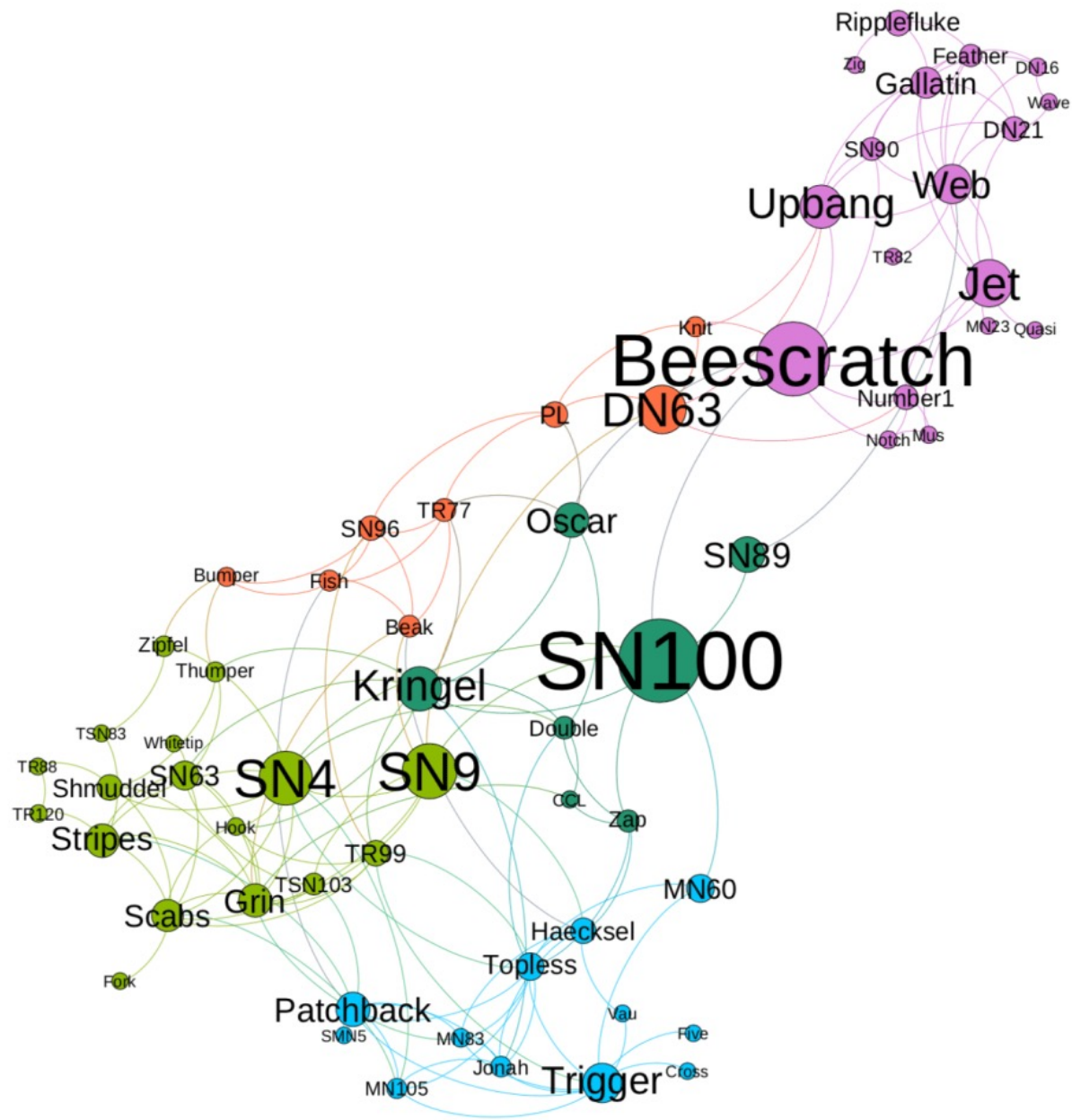


Networks:
A modern way of looking at,
reasoning about, and making
sense of the world

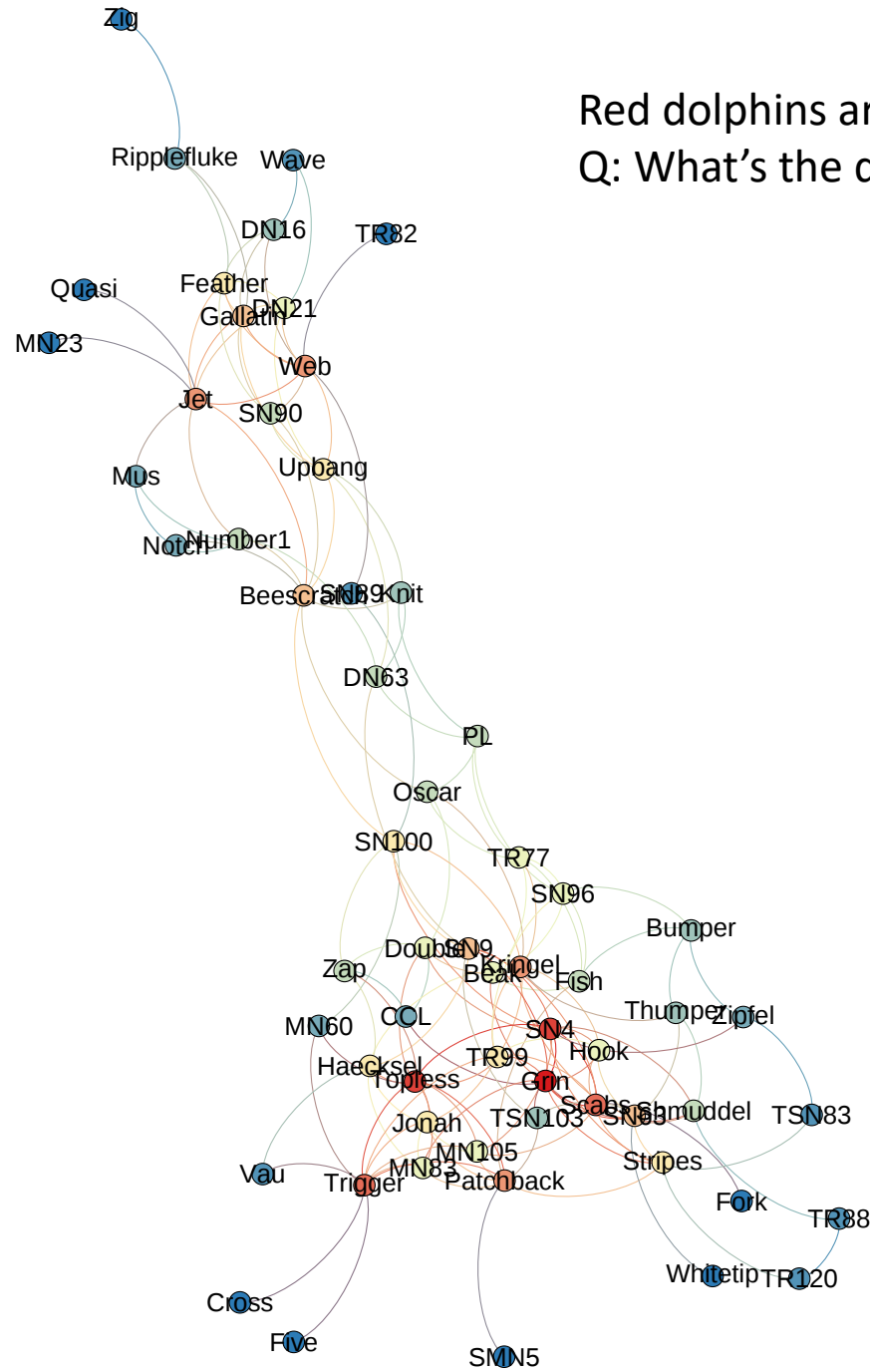


Social network analysis

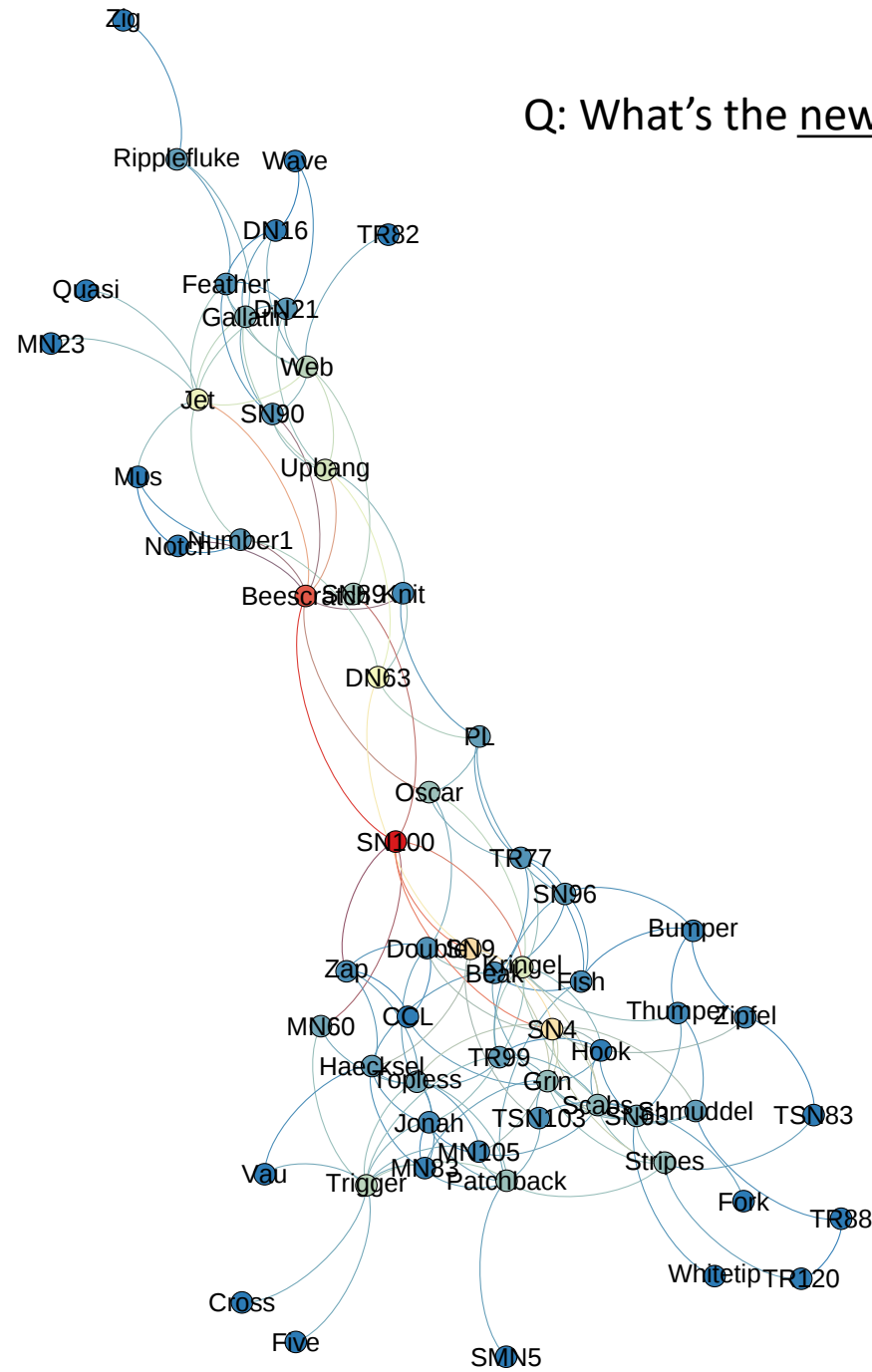
Homework: Install Gephi before next class
Bring your laptop next week



Red dolphins are more important than blue.
Q: What's the definition of importance here?



Q: What's the new definition of importance here?





Diffusion/ Cascades/ Contagion

COVID deaths vs population density

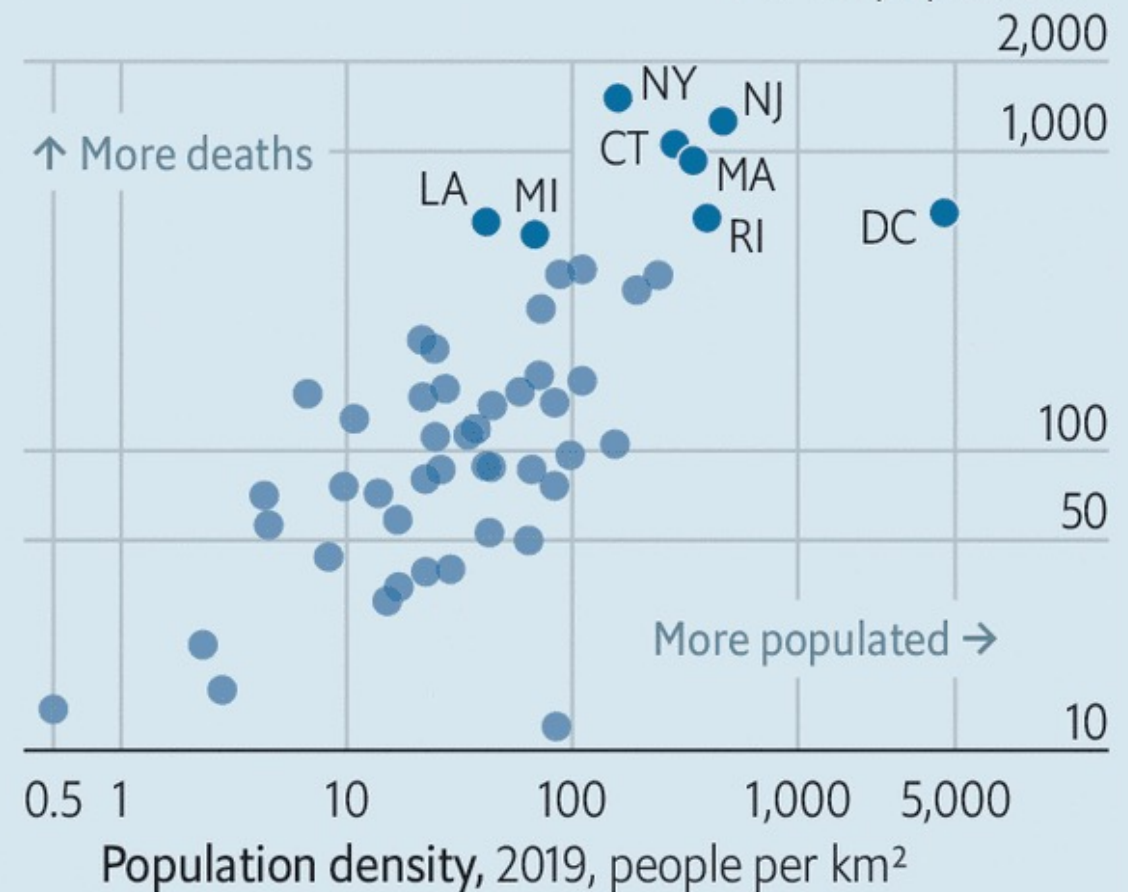
Close encounters of the covid kind

1

United States, by state

Log scales

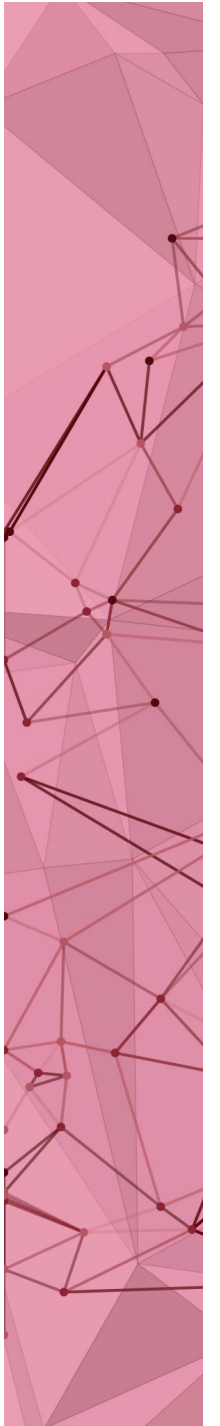
Covid-19, confirmed deaths
Per 1m population*



Sources: Johns Hopkins University CSSE;
US Census Bureau; *The Economist*

*To May 27th 2020

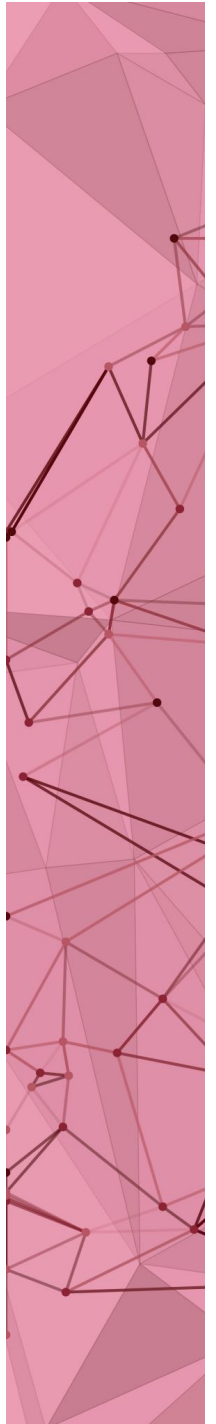
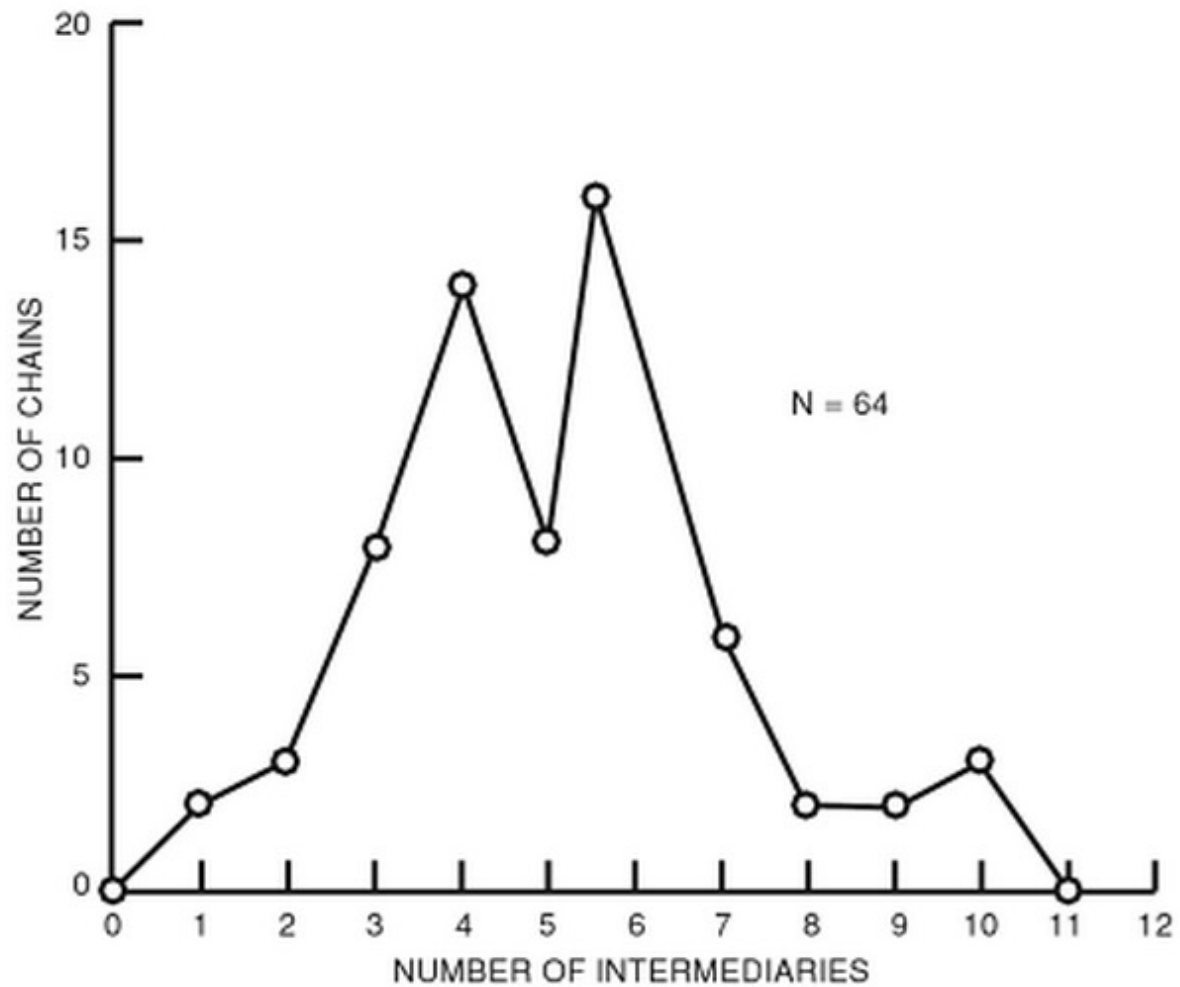
Hush puppies (1995)





Small World

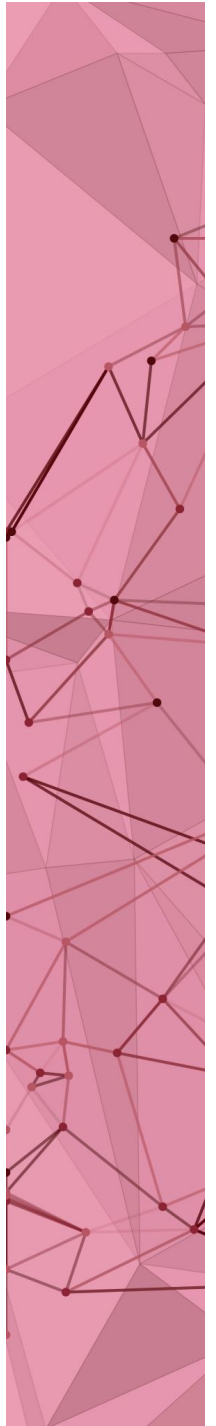
6-degrees of separation





Strategic decision-making in Networks

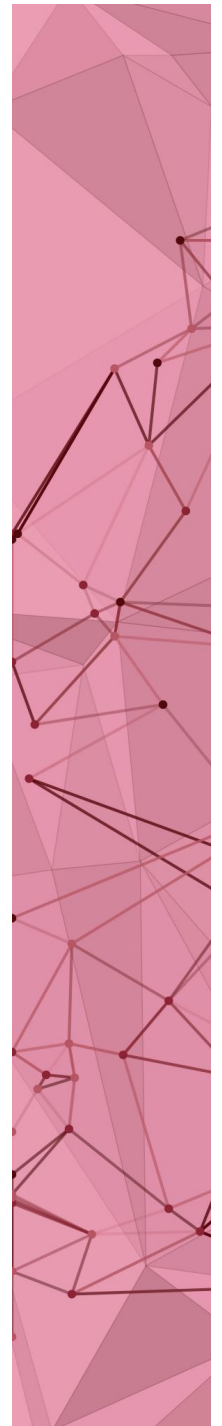
Game theory



Markets



60 Lives, 30 Kidneys, All Linked
NY Times





Networks/ Graphs

The structure of our connected world



Reminder:

- Install Gephi
- Bring your laptop