

Interdisciplinary Workshop on Information and Decision in Social Networks
November 8 - 9, 2012
MIT

Thursday, November 8, 2012	
8:30	Registration
8:45-9:00	Opening Remarks
9:00-10:00	Industry Panel – “What problems does network research need to solve?”
10:00-10:30	Break
10:30-11:30	Brief Talks – Session 1: “Structure and Communities in Networks”
11:30-11:45	Break
11:45 – 12:45	Brief Talks – Session 2: “Dynamics and Networks”
12:45 – 14:00	Lunch
14:00-14:30	Invited Plenary Presentation: Professor Vincent Blondel, Université catholique de Louvain and MIT
14:30-15:30	Poster Session – 3 rd Floor Atrium
15:30-16:00	Break
16:00-17:30	Brief Talks – Session 3: “Information Propagation, Influence and Control”
Friday, November 9, 2012	
8:30	Registration
9:00-9:30	Invited Plenary Presentation: Professor Alvin Roth, Harvard University and Stanford University
9:30-9:45	Break
9:45-10:45	Brief Talks – Session 4: “Information Propagation, Influence and Control”
10:45-11:15	Break
11:15-12:30	Brief Talks – Session 5: “Social Data Collection and Analysis”
12:30-14:00	Lunch
14:00-14:30	Invited Plenary Presentation: Professor Michael Kearns, University of Pennsylvania
14:30-15:30	Poster Session - 3 rd Floor Atrium
15:30-16:00	Break
16:00-17:00	Brief Talks –Session 6: “Structure and Communities in Networks”
17:00-17:15	Break
17:15-18:15	Brief Talks –Session 7: “Opinion Dynamics and Learning”

Program Outline
Thursday
November 8

8:30 Registration

8:45-9:00 Opening Remarks

9:00-10:00 Industry Panel

What problems does network research need to solve?

The world is moving to distributed, network systems for health, finance, work, government, and community. But there are big questions about how well these systems really work...do they make the right decisions...and we know little about their stability, optimality or how they will change society. We have four leading thinkers from the communication, mobile, banking, and information industries who will help us understand where the research community needs to go.

Participants:

Steve Whittaker, BT
Ken Gabriel, Motorola Mobility
David Zafrilla-Gonzales, BBVA
Martin Wattenberg, Google
Moderator:
Alex Pentland

10:00-10:30 Break

10:30-11:30 Brief Talks Session 1

Structure and Communities in Networks

Network structure and the aggregation of information: theory and evidence from Indonesia

V. Alatas, *World Bank*
A. Banerjee, *MIT*
A.G. Chandrasekhar, *Microsoft Research*
R. Hanna, *Harvard University*
B.A. Olken, *MIT*

Processing Power Limits Social Group Size: Computational Evidence for the Social

Brain Hypothesis
T. Dávid-Barrett, *University of London*
R.I.M. Dunbar, *University of Oxford*

Scaling Theory of Human Mobility and Spatial Network

P. Deville, *Université Catholique de Louvain*
D. Wang, *Northeastern University, Dana Farber Cancer Institute*
C. Song, *Northeastern University, Dana Farber Cancer Institute*
N. Eagle, *Northeastern University*
V. Blondel, *Université Catholique de Louvain*
A. László Barabási, *Northeastern University, Dana Farber Cancer Institute, Harvard Medical School*

Local computation of network centrality

C. Lee, *MIT*
A. Ozdaglar, *MIT*
D. Shah, *MIT*

11:30-11:45: Break

11:45-12:45: Brief Talks Session 2

Dynamics and Networks

Social Learning and Network Uncertainty

I. Lobel, *New York University*
E. Sadler, *New York University*

Intermediation and Exclusive Representation in Financial Networks

I. Fainmesser, *Brown Univ.*

Competitive Marketing Strategies over Social Networks

K. Bimpikis, *Stanford University*
A. Ozdaglar, *MIT*
E. Yildiz, *Accenture Technology Labs*

Nine Facts, Three Parameters and One Theory: A Precise Analytical Model for the Dynamics of Industry Location Networks

R. Charan, *MIT*
C. Hidalgo, *MIT*

12:45 – 14:00: Lunch

14:00-14:30 Invited Plenary Presentation

Professor Vincent Blondel

14:30-15:30 Poster Session 1

IRIE: Scalable and Robust Influence Maximization in Social Networks

K.Jung, W. Heo, W. Chen

Exploring the effect of the duration and period of Face-to-Face interactions on Close Friendships

R. Oloritun, A. Pentland, A. Madan, I. Khayal

Change in BMI Accurately Predicted via Social Exposure

R. Oloritun, T. Ouarda, S. Moturu, A. Madan, A. Pentland, I. Khayal

The Rewarding Nature of Matchmaking

L. Anik, M. Norton

Graphlet decomposition of a weighted network

H.Soufiani, E. Airoidi

Optimal Induction of a new contact in a social network

V. Borkar

Why are your Facebook "friends" not optimal?

G. Ducoffe, D. Mazauric, A. Chaintreau

Modeling balance in social networks

P.De Leenheer, V. Traag, P. Van Dooren

Understanding User Triads on Facebook

D. Doran, A. De la Rosa Algarin, S. Gokhale

The value of feedback on containment of epidemics on social networks

K. Drakopoulos, A. Ozdaglar, J. Tsitsiklis

Sociodynamic Discrete Choice: Equilibrium Behavior of the Nested Logit Model with Social Interactions

E. Dugundji

Program Outline
Thursday
November 8

14:30-15:30 Poster Session 1 Cont.

The effect of leader centrality on team performance

K. Ehrlich, H. Tong

Global and Local, Simple and Complex Problem Spaces in Collective Problem Solving Networks

D. Lazer, C. Gomez

Game Theoretic Formation of a Centrality Based Network

R. Tatko, C. Griffin

Causal Strategic Inference in Networks

M. Irfan, L. Ortiz

Analyzing Scrip Systems: Selection Rules and Optimality

K. Johnson, D. Simchi-Levi, P. Sun

Strategic Disciplining Behavior in Socialized KingPawN

J. Judd

An internet experiment on bargaining

C. Chang, Y. Kanoria, A. Montanari, M. White

Disrupting the Spread of Information

A. Khanafer, B. Touri, T. Başar

More Contentious Issues Lead to More Factions: Bounded Confidence

Opinion Dynamics of Bayesian Decision Makers

K. Varshney

15:30-16:00 Break

16:00-17:30 Brief Talks Session 3

Information Propagation, Influence and Control

Trends Prediction in Social Networks Using Influence Diffusion Models

Y. Altshuler, *MIT*

W. Pan, *MIT*

A. Pentland, *MIT*

The Fallacy of Pigeonholing Global Users into Local Models

C. Budak, *UCSB*

D. Agrawal, *UCSB*

A. El Abbadi, *UCSB*

Apple vs. Android: a comparison of social effects in adoption

J. Bjelland, *Telenor ASA*

G. Canright, *Telenor ASA*

K. Engø-Monsen, *Telenor ASA*

P. Roe Sundsøy, *Telenor ASA*

R.S. Ling, *IT University / Telenor ASA*

Connectivity & Collective Action in Social Networks

N. Hassanpour, *Yale University*

J. Liu, *Yale University*

S. Tatikonda, *Yale University*

An Analysis of One-Dimensional Schelling Segregation

C. Brandt, *Stanford University*

N. Immorlica, *Northwestern University*

G. Kamath, *MIT*

R. Kleinberg, *Cornell University*

On Bitcoin and Red Balloons

M. Babaioff, *Microsoft Research*

S. Dobzinski, *Cornell University*

S. Oren, *Cornell University*

A. Zohar, *Microsoft Research*

Program Outline

Friday
November 9

8:30 Registration

9:00-9:30 Invited Plenary Presentation:
Professor Alvin Roth

9:30 – 9:45 Break

9:45-10:45 Brief Talks Session 4

Information Propagation, Influence and Control

On Threshold Models over Finite Networks

E.M. Adam, *MIT*
M.A. Dahleh, *MIT*
A. Ozdaglar, *MIT*

A Nonparametric Method for Early Detection of Trending Topics

S. Nikolov, *MIT, Twitter, Inc.*
D. Shah, *MIT*

Active Influence in Dynamical Models of Structural Balance in Social Networks

T.H. Summers, *ETH Zürich*
I. Shames, *University of Melbourne*

SODEXO: A System Framework for Deployment and Exploitation of Deceptive Honeybots in Social Networks

Q. Zhu, *University of Illinois at Urbana-Champaign*
A. Clark, *University of Washington, Seattle*
R. Poovendran, *University of Washington, Seattle*
T. Başar, *University of Illinois at Urbana-Champaign*

10:45-11:15 Break

11:15-12:30: Brief Talks Session 5

Social Data Collection and Analysis

Game in the Newsroom: Greedy Bloggers for Picky Audience

A. May, *Columbia University*
A. Chaintreau, *Columbia University*
N. Korula, *Google*
S. Lattanzi, *Google*

A Comparative Study of Geographic Routing in Social Network Based on Mobile Phone Data

C. Herrera, *MIT*
T. Couronne, *Orange Labs*
Z. Smoreda, *Orange Labs*
C. M. Schneider, *MIT*
R. M. Benito, *MIT*
M. C. González, *MIT*

Homophily does not inflate contagion estimates in a social dilemma laboratory experiment

J.J. Jordan, *Harvard University*
D. G. Rand, *Harvard University*
S. Arbesman, *Harvard University & Ewing Marion Kauffman Foundation*
J. H. Fowler, *Harvard University & UCSD*
N. A. Christakis, *Harvard University & Harvard Medical School*

11:15-12:30: Brief Talks Session 5 Cont.

Topic-Specific Communication Patterns in Email Data

P. Krafft, *University of Massachusetts Amherst*
J. Moore, *University of Massachusetts Amherst*
H. Wallach, *University of Massachusetts Amherst*
B. Desmarais, *University of Massachusetts Amherst*
J. ben-Aaron, *University of Massachusetts Amherst*

Directed Acyclic Motifs for Conversation Analytics

L. R. Varshney, *IBM Thomas J. Watson Research Center*

12:30-14:00 Lunch

14:00-14:30 Invited Plenary Presentation:
Professor Michael Kearns

14:30-15:30 Poster Session 2

Phase Transitions for Information Spreading in Random Clustered Networks with Arbitrary Contact Rates

S. Lim, N. Kwak, K. Jung

Using Social Influence to Predict Subscriber Churn

D. Doran, V. Mendiratta, C. Phadke, D. Kushnir, H. Uzunalioğlu

Eulerian Opinion Dynamics with Bounded Confidence and Exogenous Inputs

A. Mirtabatabaei, P. Jia, F. Bullo

State-Dependent Opinion Dynamics

D. Acemoglu, M. Mostagir, A. Ozdaglar

Sparsifying Defaults: Optimal bailout policies for financial networks in distress

Z. Li, I. Pollak

Social Mobilization in Context

A. Rutherford, M. Cebrian, S. d'Souza, E. Moro, A. Pentland, I. Rahwan

Baiting Strategies for Viral Marketing

L. Seeman, Y. Singer

Search Friction and the Stationarity of Networked Markets

R. Berry, T. Nguyen, V. Subramanian

Social Behavior and Human Mobility

J. Toole, C. Herrera-Yagüe, C. Schneider, M. González

On Language Formation in a Noisy Environment

B.Touri, C. Langbort

Focal Vocabularies vs. Shared Vocabularies in Social Networks: Balancing Individual Concerns and Social Exchange

A. Mani, L. Varshney, A. Pentland

How many people you have to know to talk to most people?

T. Wang, P. Hui

Collaborative Human Decision Making with Imperfect Information

T.Wimalajeewa, P. Varshney

A Bayesian Approach for Predicting the Popularity of Tweets

T. Zaman, E. Fox, E. Bradlow

Coordination with Local Information

M. Dahleh, A.Tahbaz-Salehi, J. Tsitsiklis, S. Zoumpoulis

Program Outline

Friday
November 9

14:30-15:30 Poster Session 2 Cont.

Dynamic Pricing for Revenue Maximization in the Presence of Social Influences

B. T. Swapna, A. Eryilmaz, N. Shroff

Boosting the Public Health against Infectious Diseases through Information Dissemination in Social Networks

F. Darabi Sahneh, C. Scoglio

Exploring the role of duration of interaction in ad-hoc mobile face-to-face networks

R. Oloritun, A. Pentland, A. Madan, I. Khayal

Language, Knowledge, and Power in the International System – A Linguistic Network Analysis of Published Political Science Research by Nation-State from 1991 to 2008.

C. Gomez, D. McFarland

15:30-16:00 Break

16:00-17:00 Brief Talks

Session 6: Structure and Communities in Networks

Artificial Social Scientist: an Application to Marriage Networks

T. Menezes, CAMS, CNRS/EHESS, France

C. Roth, CMB, CNRS/HU/MAEE, Germany

Urban characteristics attributable to density-driven tie formation

W. Pan, MIT

G. Ghoshal, Harvard University

C. Krumme, MIT

A. Pentland, MIT

M. Cebrian, UCSD

Structural Analysis of Viral Spreading Processes in Social and Communication Networks Using Egonets

V. M. Preciado, Univ. of Pennsylvania

On the structure of communities in networks

B. Abrahao, Cornell University

S. Soundarajan, Cornell University

J. Hopcroft, Cornell University

R. Kleinberg, Cornell University

17:00 – 17:15: Break

17:15-18:15 Brief Talks

Session 7: Opinion Dynamics and Learning

On the Convergence of the Hegselmann-Krause System

A. Bhattacharyya, Princeton University

M. Braverman, Princeton University

B. Chazelle, Princeton University

H. L. Nguyen, Princeton University

Variational Inference for Label Aggregation in Crowdsourcing

Q. Liu, Univ. of Irvine

J. Peng, TTI-C, MIT

A. Ihler, Univ. of Irvine

Generalized Mean-Field Approximation for Opinion Spreading in Social Networks

S. Lim, KAIST

K. Jung, KAIST