

Strategic Communication and Social Networks

CIDE
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Class will meet on: Tue, 15:00–18:00.

Office hours: I encourage you to talk among you and to me about the course material. We can talk right after each class. My office hours are **Wed, 13:00–15:00**, but we might schedule meetings on other time slots as well.

Course Description: This is an advanced course that studies (1) models on strategic communication and (2) topics on social and economic networks. The course organizes around a number of lectures on the main models and research-workshop-style presentations by the instructor and the students. The course deals with contemporary approaches to questions such as strategic communication, persuasion, media influence, advertising, narrative building, opinion influence in networks, formation of social networks, and strategic interactions in social networks.

Prerequisites: Your program series of micro and a tolerance for theory. The course will make use of game theoretical tools and of the central ideas of economics of information. We will cover theoretical models as well as their applications for empirical work and economic experiments.

Objectives: (1) Review of freshly brewed material from a boosting fancy field which has many interesting unanswered questions; (2) understanding contemporary approaches to topics of persuasion, narrative building, and the role of networks in social and economic interactions; (3) ideally, sound training and motivation to write a dissertation paper. The course will go through the classical models of strategic communication (signaling, cheap talk, verifiable sender-receiver games, and persuasion), the design of communication environments, the incentives of individuals to engage in social connections, the ways in which local interactions in networks shape how information is transmitted and how people acts, and the effects on social welfare.

Some Illustrative Research Questions: The course will gravitate around the type of questions:

- How to organize decision making when different group members in an organization have different information? Who should make decisions?
- How do agents collect information when they make interrelated decisions? How do information acquisition decisions shape team choices or investments in stock market?

- How do politicians or advertisers offer information “packages” to voters or consumers in order to induce them to make specific voting or purchasing choices? How do informed agents “persuade” other, less informed, agents?
- How does advertising shape consumers’ opinions?
- Under which conditions will news providers serve useful information? Who pays for the news? Who pays for clarity in the news? Does competition lead to full or unbiased information? When is the media biased? What are the economic forces behind “fake news”?
- How do social and economic networks emerge?
- How do networks shape the way in which agents learn from others?
- How do networks shape the way in which agents try to influence others?
- When do networks allow for credible communication when agents have conflicting interests?
- How do networks affect the strategic behavior of people?
- When do networks allow for consensus in opinions and aggregate information correctly?
- When do people want to engage in friendship connections with others of similar/dissimilar characteristics?
- How do networks help propagate or mitigate financial risks?
- How do platform providers and regulators target individuals in networks?
- How do different networked layers coexist? Why are we interested in being engaged in different networks simultaneously?
- How do referrals’ networks operate?

Course Organization: The course consists of two separate parts: I. Models of Strategic Communication (around 40% of the course content) and II. Social and Economic Networks (around 60% of the course content). In the first classes of each part, I will present the basic models required to navigate through the papers later on. After that, everyone (myself included) will present papers from the literature of according to research interests and following a pre-arranged schedule. During the week following each presentation, the presenter will send anyone else a referee report on the paper. The referee report will try to identify the paper’s main contributions, its limitations, and the ways in which the paper can be improved. At the end of the course each student will be required to complete a research proposal. Naturally, the research proposal should be related to the topics discussed in class and the papers presented. Students will probably want to use the discussions

during the course, as well as all the referee reports, to elaborate their research proposals. The research proposal can be helpful as a starting point for dissertation work.

Bibliography:

Part I – Models of Strategic Communication (40% of Course Content)

- Kreps, D. M. and J. Sobel: *Signalling*, Chapter 25 in *Handbook of Game Theory*, Vol. 2, Edited by R. J. Aumann and S. Hart, Elsevier Science, (1994)
- Sobel J. (2007): “Signaling Games”
- Sobel J. (2010): “Giving and Receiving Advice”
- Bergemann, D. and S. Morris (2019): “Information Design: A Unified Perspective,” *Journal of Economic Literature*, 57(1), 1-57.
- Kamenica, E. (2019): “Bayesian Persuasion and Information Design,” *Annual Review of Economics*, 11, 249-272.

Part II – Social and Economic Networks (60% of Course Content)

- Easley D. and J. Kleinberg: *Networks, Crowds and Markets*, Cambridge University Press, 2010. There is a full-text version available online [\[here\]](#)
- Jackson, M. O.: *Social and Economic Networks*, Princeton University Press, 2008
- Jackson, M. O., B. W. Rogers, and Y. Zenou (2017): “The Economic Consequences of Social Networks,” *Journal of Economic Literature*, 55(1), 49-95. There is a WP version available online [\[here\]](#)
- Jackson, M. O. and Y. Zenou (2015): “Games on Networks,” Chapter 3 of *Handbook of Game Theory* Vol. 4, edited by Peyton Young and Shmuel Zamir. There is a WP version available online [\[here\]](#)
- Wasserman, S. and K. Faust (1994), *Social Network Analysis. Methods and Applications*, Cambridge, Cambridge University Press.

Tentative Syllabus

Part I–Models of Strategic Communication

I.1. Signaling

I.2. Models of Cheap Talk

I.3. Persuasion with Verifiable Information

I.4. Bayesian Persuasion and Information Design

I.5. Boundedly Rational Models: Bayesian Networks Protocols

Part II–Social and Economic Networks

II.1. Introduction: Notions of Graph Theory

II.2. Network Stability Concepts and Efficiency

II.3. Bayesian and Non-Bayesian Models of Learning and Influence in Networks

II.4. Strategic Interactions in Networks

II.5. Homophily and Segregation

II.6. The Idea of Centrality in Networks

Grading Policy: Grades will be based on the quality of the presentations (40%), the referee reports (40%), and the research proposals (20%). The presenters will be expected to act as discussion leaders rather than lecturers. The presentations will aim at clarifying the central points of the papers, while providing an inquisitive and critical look at their contributions. The presentations will intend to address the points:

1. What is the basic idea of the paper? How does the paper go about pursuing the idea?
2. How did you like it? What did you learn from the paper? What are the main novel takeaways relative to the existing literature?
3. How would you clarify technical aspects of the paper? How would you explain the main mechanisms and implications?
4. Do you see any problems or have any criticisms for the paper?
5. How would you extend, stretch, or push the paper further?
6. How would you propose an original research question using what you have learned from the paper?

References for Presentations:

References

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- F. Allen, S. Morris, and H. S. Shin. Beauty contest and iterated expectations in asset markets. *Review of Financial Studies*, 19:720–752, 2006.
- R. Alonso, W. Dessein, and N. Matouschek. When does coordination require centralization? *American Economic Review*, 98(1):145–179, 2008.
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- G.-M. Angeletos and A. Pavan. Transparency of information and coordination in economies with investment complementarities. *American Economic Review: AEA Papers and Proceedings*, 94:91–98, 2004.
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- D. Bergemann and S. Morris. Information design: A unified perspective. *Journal of Economic Literature*, 57(1):1–57, 2019.
- J. Best and D. Quigley. Persuasion for the long rung. Technical report, Oxford University, 2017.
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