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List of Abstracts

Daron Acemoglu (MIT)

Privacy-Constrained Social Networks

Abstract

With the increasing ease with which information can be shared in social media, the issue of privacy has become central for the functioning of various online platforms. In this paper, we consider how privacy concerns affect individual choices in the context of a network formation game (where links can be interpreted as friendships in a social network, connections over a social media platform or trading activity in online platform). In the model, each individual decides which other agents to “befriend”, i.e., form links with. Such links bring direct (heterogeneous) benefits from friendship and also lead to the sharing of information. But such information can travel over other linkages (e.g., shared by the party acquiring the information with others), defining a percolation process over the equilibrium network. Privacy concerns are modeled as a disutility that individual suffers as a result of her private information being acquired by others, and imply that the individual has to take into account who the friends of her new friend (and who the friends of friends of her new friend etc.) are. We specify conditions under which pure-strategy equilibria exist and characterize both pure-strategy and mixed-strategy equilibria. Our two main results show that, as in many real-life examples, the resulting equilibrium networks feature clustered connections and homophily. Clustering emerges because if a is friends with b and b is friends with c, then a’s information is likely to be shared indirectly with c anyway, thus making it less costly for a to befriend c. Homophily emerges because even an infinitesimal advantage in terms of direct benefits of friendship within a group makes linkages within that group more likely, in turn making information travel within that group, reducing the cost of making further within-group links due to loss of privacy, and thus increasing the likelihood of further within-group links.

Susan Athey (Stanford)

Estimating Heterogeneous Treatment Effects in a Big Data Setting, with Applications to A/B Testing and Search Manipulation.

Abstract

We introduce new methods for evaluating the impact of one of more policies or “treatments” using a combination of approaches from machine learning and causal inference. The methods are designed for applications such as personalized advertising and online recommendations, as well as to evaluating the effects of experiments (A/B tests) for online services. Unlike most existing methods based on machine learning, the approach allows the researcher to derive valid confidence intervals and test for statistical significance. The methods are applied to analyze the results of a large scale experiment on internet search manipulation, highlighting the types of queries for which search manipulation is particularly effective.

Nicholas Bloom (Stanford)
Firming up inequality

Abstract

Earnings inequality in the United States has increased rapidly over the last three decades, but little is known about the role of firms in this trend. For example, how much of the rise in earnings inequality can be attributed to rising dispersion between firms in the average wages they pay, and how much is due to rising wage dispersion among workers within firms? Similarly, how did rising inequality affect the wage earnings of different types of workers working for the same employer—men vs. women, young vs. old, new hires vs. senior employees, and so on? To address questions like these, we begin by constructing a matched employer-employee data set for the United States using administrative records. Covering all U.S. firms between 1978 to 2012, we show that virtually all of the rise in earnings dispersion between workers is accounted for by increasing dispersion in average wages paid by the employers of these individuals. In contrast, pay differences within employers have remained virtually unchanged, a finding that is robust across industries, geographical regions, and demographic groups.

Alexandre De Cornière (Toulouse School of Economics, TSE)
Quality Provision in the Presence of a Biased Intermediary, joint with Greg Taylor (U. of Oxford)

Abstract

In many industries, consumers rely on recommendations by an intermediary when choosing between competing products. Very often, the intermediary is either present on the downstream market or receives payments from downstream firms in exchange for its recommendation, leading to concern about potential bias. We consider a model with two downstream firms with endogenous qualities and an intermediary whose recommendation influences a share of consumers. We study the situation in which the intermediary is biased in favor of one firm and compare it to an objective benchmark. When the intermediary is biased, the favored firm has stronger incentives to provide quality than its rival. Consumer surplus can increase or decrease under bias. In contrast, bias unambiguously hurts consumers when firms compete in prices. Reputation concerns or information acquisition by consumers are more effective to discipline the intermediary when firms compete in prices. Our model is particularly relevant to some recent antitrust issues in technology industries.

Andrey Fradkin (MIT)
Bias and Reciprocity in Online Reviews: Evidence From Field Experiments on Airbnb

Abstract

Reviews and other evaluations are used by consumers to decide what goods to buy and by firms to choose whom to trade with, hire, or promote. However, because potential reviewers are not compensated for submitting reviews and may have reasons to omit relevant information in their reviews, reviews may be biased. We use the setting of Airbnb to study the determinants of reviewing behavior, the extent to which reviews are biased, and whether changes in the design of reputation systems can reduce that bias. We find that reviews on Airbnb are typically positive and informative. 97% of guests privately and anonymously report having positive experiences and 74% of guests submit the maximum score, five stars. When guests do not recommend a listing, this is reflected in a lower than five star rating over 90% of the time. We use the results from two field experiments intended to reduce bias to document that non-reviewers tend to have worse experiences than reviewers and that strategic reviewing behavior occurred on the site, although the aggregate effect of the strategic behavior was relatively small. Lastly, we document the presence of socially induced reciprocity in reviews, by which more social trips result in lower reporting rates of negative experiences. We use a model to show that these mechanisms for bias decrease the rate of reviews of negative experiences by 1.28 percentage points relative to scenario where all transactions resulted in honest reviews.

Matthew Gentzkow (Stanford)
Measuring Polarization in High-dimensional Data

Abstract

Standard measures of segregation or polarization are inappropriate for high-dimensional data such as Internet browsing histories, item-level purchase data, or text. We develop a model-based measure of polarization that can be applied to such data. We illustrate the measure with an application to the partisanship of speech in the US Congress from 1872 to the present. We find that speech has become more polarized across party lines over time, with a clear trend break around 1980.

Jonathan Levin (Stanford)
Retail Entry and Competition for Customers: Offline and Online

Abstract

We use credit and debit card transaction data to measure the effects of retail entry. Our initial findings on a limited set of retail categories include: (1) new outlets opened by retail chains acquire customers quickly, within their first month from opening; (2) a large fraction of new store sales on average reflects substitution from neighboring competitors, and to a lesser extent, other outlets in the same chain; (3) new entry has little effect on purchase sizes at neighboring stores, consistent with customer visits being a key factor in retail competition. We relate these findings to models of retail competition and market structure.