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Education

Northwestern University Expected June 2026
Ph.D. in Economics

University of California, Los Angeles (UCLA) 2016 – 2020
Bachelor of Science in Mathematics and Economics (with honors)
Cumulative GPA: **3.8/4.0**

Research Interests

Game Theory, Information Design, Mechanism Design, Statistical Decision Theory

Job Market Paper

Employer Competition and Certification

Abstract: This paper develops a theory of employer competition over hiring standards in labor markets where employers rely on third-party certification to screen applicants. The certifier sells tests to an applicant, who possesses noisy private information about his ability and seeks to persuade employers to offer him employment. An employer hires if conditional on the test outcome her posterior belief about the applicant's ability meets her standard. Employers compete in their selectivity or hiring standards to attract the applicant. The certifier faces both a screening problem, due to applicants' private information, and an information design problem, as tests must be informative enough to persuade employers. The screening frictions faced by the certifier affect the equilibrium determination of hiring standards and the certification mechanism. I show that this inefficiency in test allocation leads to two distortions relative to a benchmark where the certifier only faces an information design problem. First, there is an increase in the probability of unemployment. The certifier's optimal selling mechanism leads to exclusion of some applicant types. Thus, there is an excessive restriction on labor supply relative to the benchmark. Second, competition among employers intensifies. The inefficient test allocation steers the applicant supply towards less selective employers, resulting in equilibrium constriction of standards. An excessive amount of the (restricted) labor supply joins the less selective employer, making the more selective employer compete harder by lowering its standards.

Working Papers

Incentive-Compatible Information Design (joint with Jeffrey Ely)

Abstract: We study the design of mechanisms by an intermediary that generates information for a sender to persuade a receiver about an unknown attribute of the sender. The sender is initially privately, but imperfectly, informed about her attribute, and the receiver takes an action based on posterior beliefs about the sender's attribute and the sender's belief about the attribute. The design of the mechanism, therefore, confronts both incentive-compatibility constraints (for the sender) and obedience constraints (for the receiver). We characterize profit-maximizing mechanisms when the intermediary contracts with the sender, and we specialize to two applications: the design of college-admissions tests and the optimal use of consumer data on a digital market platform. We also show how our analysis extends beyond a profit-maximizing intermediary by analyzing the design of budget-balanced selling mechanisms in a lemons market.

Interim Information Design (joint with Jeffrey Ely)
Abstract: We study efficient and consumer-surplus maximizing information policies in a bilateral trade setting where the buyer is initially privately imperfectly informed about his willingness to pay. We identify a canonical class of demand functions that can be implemented by information disclosures that are targeted based on the buyer's initial private information. As an application we show that providing more information to the buyer can lead to higher market prices and a lower trade probability without affecting the consumer or producer surplus.

Certifying Lemons with Discernible Hard Information
Abstract: A sender with private information (high or low ability) tries to convince a receiver of having higher ability. A certifier offers a menu of (blackwell) experiments and prices to screen the sender. The sender uses the experiment's outcome to persuade the receiver to take a favorable action. This paper focuses on the equilibrium interaction in this certification game when the receiver can distinguish between outcomes of the experiment based only on the hard information contained in the outcome. With binary ability, for a given experiment, the hard information of an outcome is the likelihood ratio of that outcome. The main result characterizes all possible equilibrium outcomes in terms of a convex combination of menus containing only simple experiments. Using this characterization, I show the existence of an equilibrium in which soft information overrules hard information; due to equilibrium self-selection of the sender, some outcomes whose hard information makes the receiver more pessimistic about the sender's ability end up persuading the receiver to choose the favorable action.

Teaching Experience

Teaching Assistant, Northwestern University

Econ 331: Economics of Risk and Uncertainty (under Professor Marciano Siniscalchi)	Fall 2024
Econ 380: Game Theory (under Professor Asher Wolinsky)	Fall 2023
Econ 313: Economics of Data (under Professor Annie Liang)	Spring 2023
Econ 310-2: Intermediate Microeconomics (various faculty members)	Winter 2024, Spring 2022, Fall 2021

Research Experience

Research Assistant, Professor Jeffrey Ely, Northwestern University	2024 – 2025
Research Assistant, Professor Annie Liang, Northwestern University	2022
Research Assistant, Professor Simon Board and Professor Moritz Meyer-ter-Vehn, UCLA	2018 – 2019

References

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