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Undergraduate Studies:

B.A. Economics (Departmental Citation); Mathematics (Highest Honor), UC Berkeley, 2008–2011

Graduate Studies:

Harvard University, 2013 to present
Ph.D. candidate in Business Economics
Thesis title: “*Essays on Industrial Organization and the Digital Economy*”
Expected completion date: May 2019

References:

Professor Ariel Pakes
Harvard University
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Professor Leemore Dafny
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Professor Nathaniel Hendren
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Professor Robin Lee
Harvard University
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Professor Dennis Yao
Harvard University
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Research and Teaching Fields:

Primary: Industrial Organization

Secondary: Public Economics, Financial Economics

Job Market Paper:

“*Buying Data from Consumers: The Impact of Monitoring in U.S. Auto Insurance*” (w/ Shoshana Vasserman)

This paper develops an empirical framework for direct transactions of consumer data. We use it to study the design and impact of auto-insurance monitoring programs, in which insurers incentivize consumers to opt into having their driving behavior monitored for a short period of time. We acquire proprietary datasets from a major U.S. auto insurer that offers a monitoring program. The data is matched with price menus of the firm's main competitors. We develop a model for consumers' demand for insurance and for monitoring as well as the cost to insure them. Key parameters are estimated using rich data variation in insurance claims, prices, contract space, and monitoring status. We then conduct counterfactual simulations using a dynamic pricing model that endogenizes the firm's information

set. We find three main results. (i) Data collection distorts consumer behavior. Drivers become 30% safer when monitored, which boosts total surplus and changes the informativeness of the data. (ii) Demand for monitoring interacts with the product market. Monitoring take-up is low due to both consumers' disutility from being monitored and attractive outside options from other insurers. Nonetheless, introducing monitoring raises consumer welfare by 3% of premium per year. (iii) Proprietary data facilitate higher markups but protect the firm's ex-ante incentives to produce the data. A counterfactual equilibrium in which the firm must share monitoring data with competitors harms both profit and consumer welfare. This is because the firm offers less upfront incentives for monitoring opt-in, so that fewer drivers are monitored.

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Research Papers in Progress:

"Information Acquisition and the Return on Data: Evidence from Firms on an E-commerce Platform" (w/ Zhengyun Sun)

This paper provides evidence on online firms' decision to acquire information and on the impact of data access on firm performance and strategy. We empirically examine firms operating on a large Chinese e-commerce platform that have access to a data analytics product. The product provides detailed and real-time information on traffic breakdown, customer characteristics, and competitor strategies. These data are largely proprietary to the platform, and firms need to pay lump-sum fees for access. Focusing on several consumer electronics and peripherals markets, we find four main results: (i) scale economy is important. 9% of sellers pay for data but generate over 60% of sales. (ii) We construct a matching estimator and find that sellers that acquire data, on average, experience 15% higher sales growth. This is largely driven by persistent traffic growth and higher conversion rates. Importantly, most of these effects are driven by large gains among small sellers, despite lower take-up rates. (iii) Data access influences firm strategy. In particular, small sellers that acquire data significantly increase ads purchase. (iv) Data facilitates persistent learning, especially among entrants. New sellers are more likely to pay for data, conditional on firm size. Non-paying sellers that have purchased data in the past also outperform those that have never purchased data.

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"Higher Cost and Higher Markup: Uncertainty and Competition in Michigan's Auto Insurance Industry"

This paper studies the impact of uncertainty on market competition. Michigan requires auto insurers to cover all expenses related to injuries from auto accidents. However, prices are unregulated as long as competition exists. Starting in the early 2000s, long-term medical costs have ballooned, leading to rapidly increasing injury coverage premiums. Detroit, for example, had an average auto insurance rate more than five times the national average in 2017. However, insurer profit also increased during this period, largely fueled by rising markup on non-injury and smaller coverages. Using publicly available data on insurance quotes and firm-level cost, I show that uncertainty played a key role in mitigating market competition. Specifically, I propose a model of insurance pricing that incorporates firm expectation and loss aversion in a market with changing fundamentals. Comparing similar neighborhoods with different realizations of catastrophic claims over time, I show that unexpected loss development lead to higher markup ex-post, further accelerating premium increase and adverse selection.

"Incentivized Behavioral Modification and Learning in Auto Insurance" (w/ Shoshana Vasserman)

Teaching Experience:

Spring 2015 Sophomore Tutorial, *"Information Problems in Financial Markets,"* Harvard College

Professional Activities:

2018	PhD Fellow, Luohan Academy, Hangzhou
2016	Visiting Scholar, Reserve Bank of Australia Research Division, Sydney
2015–2016	PhD Fellow, JP Morgan Chase Institute, Washington, DC
2015–2016	Research Fellow, Alibaba and Ant Financial, Hangzhou
2011–2013	Technology Investment Banker, Citigroup, San Francisco
2010	Summer Financial Analyst, Houlihan Lokey, San Francisco

2009 Summer Financial Analyst, Sinochem Petroleum, Beijing
Referee Management Science

Awards and Honors:

2018 Harvard Dissertation Completion Fellowship
2015 Research Grant, Harvard Fairbank Center for Chinese Studies
2013 Doctoral Fellowship, Harvard Business School
2011 Economics Departmental Citation (top honors student), UC Berkeley
2011 Earl Rolph Memorial Prize (top undergraduate thesis), UC Berkeley

Conferences and Presentations:

2019 HBS EM Unit, Berkeley Haas EAP, Chicago Booth, Northeastern University,
University of Maryland, Georgetown University, Penn State University,
Toulouse/LHA Privacy and Data Governance Conference (invited), Chinese
Economists Society North America Conference, Yale Cowles Structural
Microeconomics Conference (scheduled)
2018 AEA/ASSA (Philadelphia), NBER Summer Institute, NBER Productivity Seminar,
HBS Digital Initiative
2017 AEA/ASSA (Chicago)
2015 Chinese Academy of Social Sciences, Reserve Bank of Australia
2013 Jerusalem Summer School of Economics

Other Qualifications:

Languages: Chinese and English

Coding: R, SQL, Stan, Python, Matlab, STATA, SAS, Latex/Lyx