NAIBAO ZHAO

Application to the NBER Digital Economics and AI Tutorial, Stanford University, January 2027

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GRADUATE STUDY

- Ph.D. student in Quantitative Marketing, Texas A&M University; **third year** 2024 – present (expected 2028)
- Ph.D. in Economics, Texas A&M University 2018
- Visiting Ph.D. Student, University of Chicago (invited by Professor James Heckman) 2017 – 2018
- Selected participant, Price Theory Summer Camp, Becker Friedman Institute, University of Chicago 2017

I was trained as an applied economist. After my economics Ph.D., I served on the economics faculty at the Research Institute of Economics and Management, SWUFE (Assistant Professor, then Associate Professor with tenure), working on structural econometrics, auctions, and human capital. In 2024 I returned to doctoral training in quantitative marketing to move my research into digital platforms and AI, where firm and consumer behavior is now increasingly organized by platforms, creators, and algorithms.

Ph.D.-level coursework (all grades A):

Economic theory	Microeconomic Theory I (the only A in a class of 33); Microeconomic Theory II (Game Theory); Microeconomic Theory III (Information and Mechanism Design)
Econometrics	Econometrics I; Econometrics II; Econometrics III (Structural Econometrics); Econometrics IV (Nonparametric Econometrics); Econometrics V (Time Series Econometrics)
Experiments	Field Experiments
Industrial organization	Industrial Organization I; Industrial Organization II
Computer science	Machine Learning (ranked first in the class, scored 110/110, class mean 73/110)

Publications and papers under review. My work has appeared in the *International Economic Review* and the *Journal of Environmental Economics and Management*, among others, and I currently have papers under review at the *American Economic Review* and the *Journal of Econometrics*.

RESEARCH INTERESTS

My research studies how digital platforms and AI reshape markets. Substantively, I focus on the creator economy and social commerce, where algorithms now sit at the center of market outcomes: recommendation algorithms decide which creators and transactions receive attention, platform-designed monetization tools shape what content gets produced, and firms increasingly rely on machine-learned models to decide whom to target. I study how creators, brands, and firms respond to these algorithmic and platform-designed incentives, and how AI/ML tools can be used reliably in business decisions. Methodologically, I combine structural modeling (dynamic discrete choice, many-to-many matching, demand and supply estimation) with machine learning and causal inference, and I build the large-scale platform datasets these questions require.

ONGOING PROJECTS RELATED TO DIGITAL ECONOMICS AND AI

1. "Matching for Transactional Attention: A Structural Analysis of Creator-hosted Live Shopping"
We study why brands partner with creators in livestream shopping even when sales are made below cost. Using a structural many-to-many matching model with pricing and bargaining, estimated on novel Douyin data, we show that these partnerships create *transactional attention value* well beyond sales profit, and that brands and creators also match on the composition of their partner portfolios.

2. "Beyond Follower Counts: Unlocking Hidden Value of Content Portfolio Choice"
We study how social commerce monetization (shoppable and sponsored content) changes what creators produce and how their content portfolios affect engagement and sales. We develop a LLM approach to classify more than 93 million TikTok videos into three content types and combine the approach with a dynamic structural model of creators' content-portfolio choices.

3. "Targeting Customers under Model Uncertainty"
Firms target customers with machine-learned treatment-effect (CATE) models, but candidate models disagree and holdout tests cannot reliably pick one. We propose combining candidate models with weights that require only the known assignment mechanism, and we bound the profit a firm forgoes by targeting on the combination.

DISSERTATION COMMITTEE

- **Yan (Lucy) Liu (Chair)** yliu@mays.tamu.edu
  Professor of Marketing, Mays Business School, Texas A&M University
- **Stephen J. Anderson** sjanderson@mays.tamu.edu
  Professor and Dr. Leonard Berry Chair in Services Marketing, Mays Business School, Texas A&M University
- **Yi Zhu** yizhu@umn.edu
  Margaret J. Holden and Dorothy A. Werlich Endowed Professor of Marketing, Carlson School of Management, University of Minnesota
- **Yonghong An** yonghongan@tamu.edu
  Professor of Economics, Texas A&M University

WHY THIS TUTORIAL

Digital economics and AI is the direction I have chosen for my research career, and I made a deliberate move to pursue it: after years as a tenured economist, I returned to doctoral training because I am convinced that platforms and AI are changing how markets work at their core. Who produces content, who trades with whom, and what consumers see and buy are increasingly decided by platform rules and algorithms, and this raises first-order economic questions about incentives, market design, competition, and welfare that we are only beginning to answer. The tutorial comes at a decisive point for me. My projects are moving from estimation to counterfactual and policy analysis, and the questions I most need to get right, such as how platform design and algorithmic allocation of attention affect creators, brands, and consumers, and how AI-driven decisions should be evaluated, are exactly the questions this community is working on. I am eager to learn where the frontier is, how leading researchers approach these problems, and to build connections that will shape my research agenda for years to come.