Curriculum Vitae, Updated Nov 2020

Wei Zhou

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EDUCATION

2016-2021(expected) **University of Arizona**
Eller College of Management
Ph.D. in Economics
Dissertation Title: Economics of Search Design on E-commerce Platforms
Dissertation Committee: Mo Xiao (Chair), Mingfeng Lin,
Ashley Langer, Hidehiko Ichimura

2014-2016 **Renmin University of China**
M.S. in Economics

2010-2014 **Huazhong University of Science and Technology**
B.E. in Electronic and Information Engineering

RESEARCH INTERESTS

- **Topics**: Economics of Information Systems, Platform Strategy, E-commerce, Digital Entrepreneurship, Gig Economy, FinTech, Industrial Organization, Behavior Economics
- **Methodology**: Applied Econometrics, Structural Modeling, Field Experiments, Machine Learning

WORKING PAPERS

- "**Exploitation and Exploration: Improving Search Precision on E-commerce Platforms**"
  Wei Zhou, Mingfeng Lin, Mo Xiao, and Zidong Wang. (**Job Market Paper**)
  -Being finalized for submission at *Management Science*
  -Nomination for Best Conference Paper Award at *CIST 2020*

- **"Competing for Search Traffic in Query Markets: Entry Strategy, Platform Design, and Entrepreneurship"**
  Wei Zhou and Zidong Wang. (**NET Institute Working Paper No. 20-12**)

- "**Herding in the U.S. Spectrum Auctions**"
  Tanjim Hossain, Mo Xiao, Zhe Yuan, and Wei Zhou

- "**Asymmetric Competition Effect: A Study of Movie Theaters in China**"
  Wei Zhou

PRE-DOCTORAL PUBLICATION

- "**Optimal Policy Design for Photovoltaic Power Industry with Positive Externality in China**" Tian Wu, Wei Zhou, Xiaoyu Yan, and Xunmin Ou. ***Resources, Conservation and Recycling***, 2016, 115(216): 22-30

WORKING IN PROGRESS

- "**Small Enough to Jail? A Structural Analysis of Arbitration in Online Labor Markets**" Mingfeng Lin and Wei Zhou

- "**Too Much of a Good Thing? Reputation Management in Online Labor Markets**" Mingfeng Lin and Wei Zhou

- "**Internet of Things, Social Media, and Productivity Growth: Evidence from a Field Experiment**"
  Yiyang Bian, Mingfeng Lin, Leon Zhao, and Wei Zhou

- "**Did Going Public Impair the Credit Ratings of the Online Crowdfunding Platform?**" Mingfeng Lin, Alex Zhou, and Wei Zhou

CONFERENCES AND WORKSHOP PRESENTATIONS

- "**Beyond the Search Bar: The Value of Search Quality on E-commerce Platforms**", International Conference on Information Systems, (**ICIS 2020**), Virtual (scheduled)

- "**Exploitation and Exploration: The Value of Improving Search Precision on E-commerce Platforms**", Conference on Information Systems and Technology, (**CIST 2020**), Virtual (scheduled)

- "**Exploitation and Exploration: The Value of Improving Search Precision on E-commerce Platforms**", Conference on Digital Experimentation, (**CODE 2020**), Virtual (scheduled)

- "**Beyond the Search Bar: The Value of Improving Search Quality on E-commerce Platforms**", INFORMS Annual Meeting (**INFORMS 2020**), Virtual (scheduled)

- "**Beyond the Search Bar: The Value of Improving Search Quality on E-commerce Platforms**", Symposium on Statistical Challenges in Electronic Commerce Research (**SCECR 2020**), Virtual

- "**Beyond the Search Bar: The Value of Improving Search Quality on E-commerce Platforms**", ISMS Marketing Science Conference (**ISMS 2020**), Virtual

- "**Asymmetric Competition Effect: A Study of Movie Theaters in China**", China Meeting of Econometric Society (**CMES 2019**), Guangzhou, China

- "**Too Much of a Good Thing? Reputation Management in Online Labor Markets**", INFORMS Annual Meeting (**INFORMS 2018**), Phoenix, AZ

TEACHING

- UA Eller College of Management, Instructor of Record
  - **Microeconomic Analysis for Business Decisions**, Summer 2018
  - **Global and Financial Economics and Strategies (Online),** Winter 2018, Summer 2019, Winter 2019, Summer 2020

- UA Eller College of Management , Online Course Co-developer
  - **Basic Economic Issues (Online)**, Fall 2019/ Spring 2020

- UA Eller College of Management, Teaching Assistant
  - **Data Analytics and Modeling**, Fall 2016, Spring 2017

BUSINESS ANALYTICS/DATA SCIENCE SKILLS

- Data Infrastructure: Hadoop, Spark
- Analytics: SQL, Tableau, Google Analytics
- Statistic Software: R, SAS, Stata
- Programming & Scientific Computing: Python/C++/Matlab

GRANTS, AWARDS AND SERVICES

- Nomination for Best Conference Paper Award, Conference on Information Systems and Technology(CIST), 2020
- NET Institute Summer Research Grant, 2020
- Fellow, OCIS Doctoral Consortium at Academy of Management, 2020
- Graduate & Professional Student Council Travel Grant, University of Arizona, 2020
- Steve Manos Prize (Best Second-Year Paper), University of Arizona, 2018
- Meritorious Winner, Mathematical Contest in Modeling, U.S., 2013
- Served as anonymous referee for
  - International Conference on Information Systems
  - UA Graduate & Professional Student Council Research/Travel Grant

INDUSTRY COLLABORATION

Alibaba Group, Hangzhou, China

- Economist (Mechanism Design and Platform Growth Team) January 2019-Present

REFERENCES

Mo Xiao, Ph.D. (Dissertation Chair and Co-author)
Associate Professor of Economics
Eller College of Management
University of Arizona
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Mingfeng Lin, Ph.D. (Dissertation Committee Member and Co-author)
Associate Professor of Information Technology Management
Scheller College of Business
Georgia Institute of Technology
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Ashley Langer, Ph.D. (Dissertation Committee Member)
Assistant Professor of Economics
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ABSTRACTS

- "**Exploitation and Exploration: Improving Search Precision on E-commerce Platforms**"
  Wei Zhou, Mingfeng Lin, Mo Xiao, and Zidong Wang. (**Job Market Paper**)

E-commerce platforms match online buyers and sellers using their search technologies. Although a more precise search algorithm may improve search targetability, it may also reduce cross-selling opportunities as consumers spend less time exploring different products. We empirically quantify these tradeoffs through a collaboration with Alibaba Group. Specifically, we take advantage of a 2019 quasi-experiment on Taobao.com, in which the platform refined some product categories into finer subgroups in order to return more targeted search results to online shoppers. Using granular data on consumer search and purchase behaviors across multiple search sessions and product categories, we find that the improvement in search precision leads to a 37.3% increase in consumers' click-through rates and a 64.4% increase in gross merchandise volume in the product category we study. The improvement in matching outcomes in the short run, however, is accompanied with a substantial decrease in consumer engagement and unplanned purchases in the long run for consumers prone to spending longer time searching. On average, these consumers conduct 5.5% fewer searches, spend 4.1% less time on the platform, and decrease their spending on related categories by 2.2% in the following week after the search precision increases. Overall, our findings illustrate the tradeoff between exploitation and exploration in e-commerce search design that has not yet been previously documented in the literature.

- **"Competing for Search Traffic in Query Markets: Entry Strategy, Platform Design, and Entrepreneurship"**
  Wei Zhou and Zidong Wang. (**NET Institute Working Paper No. 20-12**)

E-commerce platforms guide consumers' search traffic toward online retailers that are classified into different product categories. An online retailer can either list itself under a broad category to reap larger search traffic, or choose a narrow category, often a subcategory of a broad category, to target a niche audience. In collaboration with Taobao.com, China's largest e-commerce platform, we exploit a change in the platform's search algorithm to study online retailors' location decisions in the digital world. In our framework, each market is defined by a search query, which matches an online retailer's product either closely or distantly. The platform allocates search traffic into different categories, and online retailers compete for the search traffic in each product category with heterogeneous abilities to convert search traffic into revenue. Using detailed data on search queries, search exposure, and seller revenue, we find that an online retailer faces a tradeoff between market size and competition intensity, and a retailer is better at converting closely matched search traffic into revenues. By refining a broader category into narrow subcategories, the e-commerce platform gives retailers the flexibility to forgo higher volumes of search traffic in order to gain a better conversion rate. Eliminating category refinement would lead to about 17% revenue losses for sellers in product categories we study, with incidence mostly on sellers that specialize in niche products. Our results suggest that e-commerce platforms as entrepreneurial incubators can help small business owners thrive on the platform through targeted search traffic allocation.

- "**Herding in the U.S. Spectrum Auctions**"
  Tanjim Hossain, Mo Xiao, Zhe Yuan, and Wei Zhou

In the United States, the Federal Communications Commission auctions off spectrum licenses, which typically cover geographically distinctive areas. A bidder may be uncertain about a license's value, given stochastic future demand and unclear competitive landscape. We investigate the possibility of bidder herding on competitors' bidding decisions in Spectrum Auction 73. We exploit rich bidder-license fixed effects and leverage on competing bidders' private information about a license's contribution to their potential winnings to causally identify the herding effect. We find strong evidence of bidder herding in the initial chaotic rounds of the auction. Compared with small and medium-sized bidders, large national carriers (including AT&T and Verizon) are more likely to herd on competitors' bidding decisions.

- "**Asymmetric Competition Effect: A Study of Movie Theaters in China**"
  Wei Zhou

In this paper, I study entry and expansion decisions of chains in a new and growing industry with high market uncertainty. Using a unique firm-level data set on the dramatic expansion of the movie theater industry in China from 2012-2016, I analyze how a chain's expansion decision is affected by the presence of heterogeneous rivals. Based on the insight that chains are more likely to enter the market closed to their existing networks due to economies of density, I devise an instrumental variable strategy to address the endogeneity of rivals' entry behaviors. I find significant evidence of asymmetric competition effect in the sense that chains are more likely to enter markets where independent theaters have a larger scale of presence, but less likely to enter market occupied by other chains. Further empirical analysis suggests that learning is more likely to explain the positive competition effect of a rival on the firm's entry decisions. My study lends support to another explanation for firm clustering: information spillovers of entry behaviors.