

Zhiyu Zeng

CONTACT INFORMATION	526 Knight Hall St. Louis, MO 63105 USA	<i>Phone:</i> +1 (314) 217-5326 <i>E-mail:</i> zengz@wustl.edu <i>Website:</i> https://zhiyuzeng.org
RESEARCH INTERESTS	Online Platform, Causal Inference, Field Experiment, Structural Model, Machine Learning, Artificial Intelligence	
EMPLOYMENT	Olin Business School, Washington University in St. Louis <ul style="list-style-type: none">• Post Doctoral Research Associate	2023–Present
EDUCATION	Business School, Imperial College London <ul style="list-style-type: none">• Visiting Student in Analytics, Marketing, and Operations• Host: Prof. Jiankun Sun Tsinghua University <ul style="list-style-type: none">• Ph.D. in Management Science and Engineering• Advisor: Prof. Zuo-Jun Max Shen Tsinghua University <ul style="list-style-type: none">• B.S. in Industrial Engineering• Double Degree in Business Administration	2022–2023 2018–2023 2014–2018
PUBLICATIONS AND PAPERS UNDER REVISION	<ol style="list-style-type: none">1. Zhiyu Zeng, Hengchen Dai, Dennis Zhang, Heng Zhang, Renyu Zhang, Zhiwei Xu, and Zuo-Jun Max Shen. The Impact of Social Nudges on User-Generated Content for Social Network Platforms. Management Science [Link].2. Zhiyu Zeng, Nicholas Clyde, Hengchen Dai, Dennis Zhang, Zhiwei Xu, and Zuo-Jun Max Shen. The Value of Customer-Related Information on Service Platforms: Evidence from a Large Field Experiment. Major revision (3rd round) at Manufacturing & Service Operations Management [Link].	
WORKING PAPERS	<ol style="list-style-type: none">1. Zhiyu Zeng, Zhiqi Zhang, Dennis Zhang, and Tat Chan. The Impact of Recommender Systems on Content Consumption and Production: Evidence from Field Experiments and Structural Modeling [Link].2. Zhiqi Zhang, Zhiyu Zeng, Ruohan Zhan, and Dennis Zhang. Deep Learning for Policy Targeting with Continuous Treatment.	
WORK IN PROGRESS	<ol style="list-style-type: none">1. Estimating a Repeated Search Model: An Inverse Reinforcement Learning Approach, with Shuo Zhang, Xueming Luo, Dennis Zhang, and Tat Chan.2. Evaluating Gender Bias: Price Dynamics of Male and Female Depictions in Non-Fungible Token Markets, with Zhiqi Zhang and Dennis Zhang.3. Investigating Long-Term Treatment Effects: Evidence from Field Experiment Termination and Resumption, with Zhiqi Zhang, Ruohan Zhan, and Dennis Zhang.	

TEACHING EXPERIENCE	Instructor	
	• Online master (working professionals) core: Text Mining	Summer 2024
	– Teaching evaluation: 9.00/10 (school norm: 9.04/10)	
	• Master core: Text Mining	Spring 2024
	– Teaching evaluation: 9.67/10 (school norm: 8.93/10)	
	• Master core: Prescriptive Analytics	Fall 2023
	– Teaching evaluation: 9.33/10 (school norm: 9.10/10)	
	Teaching Assistant	
	• Ph.D. core: AI & Machine Learning for Business Applications	Fall 2023
HONORS AND AWARDS	• Honorable Mention and Finalist, MSOM Student Paper Competition	2023
	• First-Class Excellence Scholarship, Tsinghua University	2022
PROFESSIONAL SERVICES	• Session Chair, 2024 INFORMS Annual Meeting	2024
	• Reviewer, Manufacturing & Service Operations Management	2024
	• Judge, INFORMS BOM Best Working Paper Competition	2023
	• Session Chair, 2023 China India Insights Conference	2023
CONFERENCE PRESENTATIONS	“The Impact of Social Nudges on User-Generated Content for Social Network Platforms”	
	• INFORMS Annual Meeting, Phoenix, USA	2023
	• China India Insights Conference, Stanford, USA	2023
	• INFORMS Annual Meeting, Virtual Conference	2021
	“The Value of Customer-Related Information on Service Platforms: Evidence from a Large Field Experiment”	
	• Seminar at Imperial College Business School, London, UK	2022
	• MSOM Conference, Virtual Conference	2021
	“The Impact of Recommendations on Consumption and Creation on Online Content-Sharing Platforms”	
	• 34th Annual POMS Conference, Minneapolis, USA	2024
	• CSAMSE Conference, Shenzhen, China	2023
INDUSTRY EXPERIENCE	• Data Analyst Intern , Kwai	2018–2023
	• Data Analyst Intern , DiDi Chuxing	2017–2018
	• Business Analyst Intern , Amazon	2017
SKILLS	Programming Languages: Python, R, SQL, C/C++, HTML, L ^A T _E X	

REFERENCES

Prof. Zuo-Jun Max Shen

Professor Emeritus
University of California, Berkeley
Berkeley, CA, USA
E-mail: maxshen@berkeley.edu
Pro Vice-Chancellor and Vice-President (Research)
The University of Hong Kong
Hong Kong, China
E-mail: maxshen@hku.hk

Prof. Tat Y. Chan

Philip L. Siteman Professor
of Marketing
Olin Business School
Washington University in St. Louis
St. Louis, MO, USA
E-mail: chan@wustl.edu

Prof. Dennis J. Zhang

Associate Professor of Supply Chain, Op-
erations, and Technology
Olin Business School
Washington University in St. Louis
St. Louis, MO, USA
E-mail: denniszhang@wustl.edu

ABSTRACT OF
THE JOB
MARKET
PAPER

The Impact of Recommender Systems on Content Consumption and Production: Evidence from Field Experiments and Structural Modeling

Online content-sharing platforms such as TikTok and Facebook have become integral to daily life, leveraging complex algorithms to recommend user-generated content (UGC) to other users. While prior research and industry efforts have primarily focused on designing recommender systems to enhance users' content consumption, the impact of recommender systems on content production remains understudied. To address this gap, I conducted a randomized field experiment on one of the world's largest video-sharing platforms. The experiment manipulated the algorithm's recommendation of creators based on their popularity, excluding a subset of highly popular creators' content from being recommended to the treatment group. The experimental results indicate that recommending content from less popular creators led to a significant 1.34% decrease in video-watching time but a significant 2.71% increase in the number of videos uploaded by treated users. This highlights a critical trade-off in designing recommender systems: popular creator recommendations boost consumption but reduce production. To optimize recommendations, I developed a structural model wherein users' choices between content consumption and production are inversely affected by recommended creators' popularity. Counterfactual analyses based on the structural model reveal that the optimal strategy often involves recommending the content from less popular creators to enhance production, challenging current industry practices. Thus, a balanced approach in designing recommender systems is essential to simultaneously foster content consumption and production.

Last updated: September 2024