ERIC B. ZHOU

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U.S. Citizen

Education

2023 - 2026 (Expected) | **Boston University Questrom School of Business** — Boston, MA
Doctoral Candidate in Information Systems
Advised by Dokyun Lee

2021 - 2023 | **Washington University in St. Louis Olin Business School** — St. Louis, MO
Master of Science in Business Administration

2019 - 2021 | **Carnegie Mellon University Tepper School of Business** — Pittsburgh, PA
Master of Business Administration, *Business Analytics Track*
Concentrations in *Business Technology* and *Operations Research*

2014 – 2018 | **Washington University in St. Louis Olin Business School** — St. Louis, MO
Bachelor of Science in Business Administration
Majors in *Finance* and *Marketing*

Research Interests

Computational creativity
Unintended consequences of AI
Ethics of AI and technology
Economics of unstructured data

Working Papers

Zhou, Eric; Lee, Dokyun. "Generative AI, Human Creativity, and Art." *Preparing for submission.*

"Recent artificial intelligence (AI) tools have demonstrated their ability to produce outputs traditionally considered creative. One such system is text-to-image generative AI, which automates humans' execution to generate high-quality digital artworks. Utilizing a dataset of over 4 million artworks from more than 50,000 unique users, our research shows that text-to-image AI substantially enhances human creative productivity by 25% and increases the likelihood of receiving a favorite per view by a similar percentage. While peak artwork content novelty (focal objects and object relationships) increases over time, average content novelty declines, suggesting an expanding but inefficient creative space. Additionally, there is a consistent reduction in visual novelty (pixel-level stylistic elements). Importantly, AI-assisted artists who can produce more novel ideas, regardless of overall novelty prior to adoption, produce artworks that their peers evaluate more favorably. The results imply that ideation and likely filtering are necessary skills in the text-to-image process, thus giving rise to "generative synesthesia" - the harmonious blending of human senses and AI mechanics to discover new creative workflow."

Zhou, Eric; Hui, Xiang; Lee, Dokyun. "Economic Value of Image-Based Seller Quality Signals." *Work in progress.*

WISE 2022 Best Student Paper Finalist

"In online marketplaces, sellers can rely on alternative mechanisms to signal their quality when they lack rich transaction histories. Using scraped data on GPU sales from eBay, we find that certain image signals can substitute for reputation to increase conversion rates amongst sellers with less than 100% positive reputation, and conditional on making a sale, can realize a 5% price premium on average. However, the effects are only significant for less reputable sellers."

Lee, Dokyun; **Zhou, Eric**; Mao, Chengfeng; Kane, Gerald. "Interpretable Machine Learning for Theory Building." *On hold. Accepted to MISQ Author Workshop*.

"Recent advances in Interpretable Machine Learning (IML) offer flexible, scalable solutions to help humans develop novel hypotheses using large-scale unstructured data. We demonstrate by applying a novel IML algorithm to three datasets and reproduce theoretical insights from published research with minimal time and human intervention."

Ongoing Projects

Zhou, Eric; Lee, Dokyun. "Generative Entrants vs. Human Incumbents" *Analyzing data.*

Lee, Dokyun; **Zhou, Eric**. New Generative AI Project! *Analyzing data.*

Conference Presentations & Workshops

October 2023 — **Zhou, Eric**; Lee, Dokyun. "Generative AI, Human Creativity, and Art."
INFORMS Annual Meeting 2023 at Phoenix, AZ

October 2023 — **Zhou, Eric**; Lee, Dokyun. "Generative AI, Human Creativity, and Art."
INFORMS Workshop on Data Science at Phoenix, AZ

September 2023 — **Zhou, Eric**; Lee, Dokyun. "Generative AI, Human Creativity, and Art."
Wharton Business and Generative AI Workshop at San Fransisco, CA

December 2022 — **Zhou, Eric**; Hui, Xiang; Lee, Dokyun. "Economic Value of Image-Based Seller Quality Signals."
Workshop on Information Systems and Economics (WISE) at Copenhagen, DK
Best Student Paper Finalist

August 2020 — Lee, Dokyun; **Zhou, Eric**; Mao, Chengfeng; Kane, Gerald. "Interpretable Machine Learning for Theory Building."
MISQ Author Workshop, virtual

Teaching Experience

Spring 2023 — Head Teaching Assistant, DAT 500W: A/B Testing in Business
Taught by Xiang Hui & Christopher Mondy

Research Experience

2019 - 2021 — **Graduate Research Assistant** at Carnegie Mellon University — Pittsburgh, PA
Advisor: Dokyun Lee

- Applied a novel Deep Learning algorithm Focused Concept Miner (FCM) on three text datasets to reproduce theoretical insights published in top journals.
- Created FCM user guide and demonstration, serving as liaison with faculty alpha/beta testers (Github link).
- Prepared course material for *Deep Learning for Business: Mining Unstructured Data*, covering technical details on neural language models like Transformer, BERT, GPT1, 2, & 3, etc.

Industry Experience

2021 - 2022 — **Machine Learning Contractor** at Angel Flights West (Remote) — Santa Monica, CA

- Trained a pilot clustering pipeline to identify core pilot segments based on preference surveys.
- Consulted on how to implement a mission classification model based on the results of the pilot segments.
- Ran simulations to validate centroid definitions and ensure robustness to random parameter initializations.
- Implemented and deployed model in Microsoft Azure, allowing the client to scale operations to new data.
- Created mission classification pipeline to identify mission types and optimize matching with pilot types.
- Designing flight recommendation algorithm to complement ongoing micro-targeting campaigns.

2018 - 2019 — **Market Research Analyst** at Nielsen BASES — Wilton, CT
Product Innovation Analytics

- Designed and conducted research plans and data analysis to evaluate new product concepts.
- Consulted for Fortune 500 CPG clients on product ideation and market entry for long-term success.
- Co-led initiative to develop predictive model that forecasts incremental brand value of new innovations.

Skills

Computer
Proficient: Python, R, SQL, LaTeX, Web Scraping
Basic: Java, Julia

Language
English: Native
Mandarin: Proficient
French: Proficient

Coursework

Fall 2020	Economining (PhD Seminar in Business Technologies)
Fall 2021	Microeconomics I Empirical Methods in Business: Part B (Advanced Econometrics) Doctoral Seminar in Marketing
Spring 2022	Microeconomics II Causal Inference Analytical Modeling in Marketing: Part A Empirical Methods in Structural Modeling
Fall 2022	Empirical Methods in Business: Part A Seminar in Strategy & Organization Experimental and Behavioral Research Methods: Part A
Spring 2023	Strategic Management of Innovation & Technology Seminar in Strategy Independent Study in Strategy: Creativity
Fall 2023	Applied Machine Learning Seminar in Generative AI and Causal Inference with Text

Honors & Awards

Oct. 2023	INFORMS Gold Student Scholarship
Dec. 2022	WISE 2022 Best Student Paper Finalist
May 2019	Tepper School of Business merit-based scholarship
Feb. 2019	Nielsen BASES Client Service Superstar Award
Nov. 2014	2nd place, Olin Foundations of Business Product Design Competition
May 2014	Olin Business School merit-based scholarship
May 2014	Xerox Award for Innovation & Information Technology
June 2013	1st place in nation, Database Design & Applications at FBLA National Leadership Conference

Activities

Dance Instructor for CMU KPDC - Carnegie Mellon University
Dancer for KASA Dance - Carnegie Mellon University
Dancer for Dancers' Symposium – Carnegie Mellon University
Executive board member, videographer, dance instructor for PL4Y Dance - Washington University in St. Louis