Application to Attend Digital Economics and AI Tutorial Meeting

Contact Information

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Graduate Study

Program: Ph.D. in Operations Management (Minor in Computer Science)
Institution: University of Maryland
School: Robert H. Smith School of Business
Department: Decision, Operations & Information Technologies
Enrollment: September 2021 – May 2027 (Expected)

Brief Description of Course of Study:
I am a fifth-year Ph.D. candidate in Operations Management at the Robert H. Smith School of Business, University of Maryland. My graduate study focuses on data-driven decision making and empirical research in operations management. My training spans three core areas: economics (Microeconomic Theory, Econometrics, Empirical Industrial Organization, Computational Economics), computer science (Natural Language Processing, Trustworthy Machine Learning, Human–AI Interaction), and operations (Optimization, Probabilistic Models, and Stochastic Modeling). I pursue interdisciplinary research at the intersection of these domains, supported by active involvement in the Institute for Trustworthy AI in Law & Society and the Maryland Language Science Center.

Research Interests:
My research centers on the use of artificial intelligence for decision making in operations. I work at the intersection of marketplace analytics, service operations, and AI for social good—addressing critical issues such as algorithmic fairness, AI copyright infringement, and implicit biases in large language models. Methodologically, I draw on optimization, causal inference, and machine learning—particularly natural language processing—to analyze unstructured data, uncover business insights, and tackle complex operational challenges.

Publications

†: Equal contribution

- **Towards Conceptualization of "Fair Explanation": Impact of Asian Hate Speech Explanations on Content Moderators** [Paper][Code]
  Tin Nguyen†, Jiannan Xu†, Aayushi Roy, Hal Daumé III, and Marine Carpuat.

EMNLP 2023 — Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing.

- **Effort-aware Fairness: Incorporating a Philosophy-informed, Human-centered Notion of Effort into Algorithmic Fairness Metrics** [Paper][Code]
  Tin Nguyen†, Jiannan Xu†, Zora Che, Phuong-Anh Nguyen-Le, Rushil Dandamudi, Donald Braman, Furong Huang, Hal Daumé III, and Zubin Jelveh.
  AAAI/ACM AIES 2025 — Proceedings of the 8th AAAI/ACM Conference on AI, Ethics, and Society.

- **Which Demographic Features Are Relevant for Individual Fairness Evaluation of U.S. Recidivism Risk Assessment Tools?** [Paper][Code]
  Tin Nguyen, Jiannan Xu, Phuong-Anh Nguyen-Le, Donald Braman, Jonathan Lazar, Hal Daumé III, and Zubin Jelveh.
  ICAIL 2025 — Proceedings of the 20th International Conference on Artificial Intelligence and Law.

Working Papers

- **Personalized Assortment Optimization for a Subscription Business Model of Experience Goods** [Paper]
  Jiannan Xu, Gah-Yi Ban, Wedad J. Elmaghraby, and L. Beril Toktay
  Reject and Resubmit at Management Science (2025)
  Media Coverage: Imperial Business Knowledge

- **AI Self-preferencing in Algorithmic Hiring: Empirical Evidence and Insights** [Paper]
  Jiannan Xu, Gujie Li, and Jane Yi Jiang
  Under Review at Science Advances (2025)
  Media Coverage: The Register
  Runner-up, Best Student Paper at Conference on Information Systems and Technology 2025
  Finalist, Best Student Paper Presentation Award at Fisher AI in Business Conference 2025
  Winner, INFORMS MIF Summer Webinar Competition 2025
  Third Place, INFORMS K-12 Poster Competition 2025

Selected Works-In-Progress

- **What You Say or How You Say It? Predicting Freelance Job Success with Large Language Models**
  Jiannan Xu, Ashish S. Kabra, Kunpeng Zhang, and Wedad J. Elmaghraby
  Draft in Preparation

- **AI-Infused Nudges for Supply Chain Decision Making**
  Jiannan Xu, Jane Yi Jiang, and Wedad J. Elmaghraby
  Experimental Pilot Study

- **AI Copyright Infringement: Customers, Creators, and Model Marketplaces**
  Jiannan Xu, Jane Yi Jiang, and Jiding Zhang
  Model Development

Dissertation (in progress; proposal successfully defended)

Dissertation Title: *AI-Infused Decision Making in Operations: Personalization, Prediction, and Persuasion*

Short Dissertation Description:
My dissertation explores how AI can enhance decision-making in operations through three interconnected lenses: personalization, by optimizing product recommendations in subscription-based businesses offering experience goods; prediction, by using large language models (LLMs) to forecast freelance job success through analysis of client–freelancer conversations; and persuasion, by leveraging AI-generated natural language explanations as behavioral nudges to improve compliance with optimal policies in supply chain decision making.

Dissertation Committee:

- Wedad J. Elmaghraby (Chair), Dean's Chair of Operations Management, Robert H. Smith School of Business, University of Maryland
- Gah-Yi Ban, Associate Professor of Analytics & Operations, Imperial College Business School
- Kunpeng Zhang, Associate Professor of Information Systems, Robert H. Smith School of Business, University of Maryland
- Ashish Kabra, Assistant Professor of Operations Management, Nanyang Business School, NTU Singapore.
- Hal Daumé III (Dean's Representative), Volpi-Cupal Family Endowed Professor of Computer Science and Language Science, Department of Computer Science, University of Maryland

Motivation for Attending the Tutorial Meeting

Attending this tutorial meeting will meaningfully support my dissertation and research agenda by strengthening my methodological foundation and providing an opportunity to receive feedback from leading scholars. My work sits at the intersection of marketplace analytics, AI, and digital economics, and the tutorial's topics directly align with these themes. Participation in this tutorial meeting will improve the rigor of my ongoing projects and help me engage with a community of scholars working on adjacent research problems.