

Xi Chen

Curriculum Vitae

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PROFESSIONAL EXPERIENCE

09/2014–present **New York University, Stern School of Business, Department of Technology, Operations, and Statistics.**

Full Professor, Andre Meyer Faculty Fellow.

- Lead research and industry projects on **digital advertising markets**, dynamic pricing, recommendation, and algorithmic marketplace optimization.
- Advise teams at **Amazon, Meta, Adobe, JPMorgan, Alibaba** on ads pricing, delivery, ranking, forecasting.
- **Area Editor, Operations Research (ML & Data Science).**

08/2021– **Amazon Digital Advertising Forecasting Team, Principal Research Scientist.**

08/2023 ◦ Led modeling for **forecasting, pacing, pricing, and allocation** in a multi-billion-dollar global ad marketplace.

- Contributed to **Video Ads growth** and major streaming partnerships (Twitch, Hulu) through improved supply forecasting, auction liquidity, and relevance.
- Developed **LLM-enhanced features**, and privacy-aware pipelines supporting analysis of auction design, advertiser behavior, and policy changes.

09/2014–present **New York University, Courant Institute of Mathematical Sciences, Center for Data Science.**

Affiliated Faculty

- Collaborate on optimization, reinforcement learning, and large-scale ML for marketplace algorithms and pricing.

08/2013– **UC Berkeley, Electrical Engineering and Computer Science.**

08/2014 **Postdoctoral Research Scientist under Prof. Michael I. Jordan**

- Conducted research in probabilistic modeling and online learning.

2007–2009 **Carnegie Mellon University, Tepper School of Business.**

MS in Operations Research

CONSULTING FOCUS

- Digital markets, Ads, and Recommender Systems
- Algorithmic dynamic pricing, Differential privacy, and Fairness
- Generative AI, and Agentic AI.
- Digital assets, Quantitative trading, Real World Assets (RWA), Blockchain

RESEARCH AREAS AND IMPACT

- **Digital Advertising and Online Platforms.** I spent two years as a full-time **Principal Research Scientist** at **Amazon Ads**, leading modeling efforts in large-scale forecasting, pricing, pacing, and delivery for global advertising marketplaces.
- **Dynamic Pricing and Revenue Management.** My research covers contextual and dynamic pricing, bandit algorithms, recommendation, and network revenue management, with multiple publications in *Management Science* and *Operations Research*. I currently serve as a **Department Co-Editor** for *Operations Research*.
- **Statistical Machine Learning and Generative AI.** I work on high-dimensional and distributed statistical ML, robust/stochastic optimization, reinforcement learning, and large language models, with applications to business analytics, finance, and operations. I am a **Fellow of ASA and IMS**, and was recognized by **Forbes 30 Under 30 in Science** and **Poets & Quants 40 Under 40 MBA Professors**.
- **Blockchain, Quantitative Trading, and DeFi.** My recent work includes mechanism design and transaction-fee allocation in blockchains, as well as incentive-compatible protocols for decentralized finance. I co-authored **Web3: Blockchain, the New Economy, and the Self-Sovereign Internet** (Cambridge University Press, 2024) and co-edited **Beyond AI: ChatGPT, Web3, and the Business Landscape of Tomorrow** (Springer, 2024), both used as MBA-level textbooks on Web3 and the digital economy.

SELECTED AWARDS & GRANTS

SCHOLARLY HONORS

- 2025 **Fellow, American Statistical Association (ASA).**
- 2024 **Fellow, Institute of Mathematical Statistics (IMS).**
- 2022 **COPSS Emerging Leader Award.**
- 2022 **Andre Meyer Faculty Fellowship, NYU Stern.**
- 2021 **Elected Member, International Statistical Institute (ISI).**
- 2021 **Poets & Quants: World's Best 40 Under 40 MBA Professors.**
- 2017 **Forbes 30 Under 30 (Science).**
- 2013 **Simons–Berkeley Research Fellowship.**

INDUSTRIAL AWARDS & RESEARCH GRANTS

- 2020 **Facebook Faculty Research Award.**
- 2020 **J.P. Morgan AI Research Award.**
- 2019 **NSF CAREER Award.**
- 2018 **Bloomberg Data Science Research Award.**
- 2018 **Alibaba Innovation Research Award.**
- 2017 **Adobe Data Science Research Award.**
- 2015 **Google Faculty Research Award.**

BEST PAPER AWARDS

- 2025 **POM Michael Pinedo Best Retail Operations and Revenue Management Paper Award.**
- 2022 **Best Paper Award, NeurIPS Workshop on “Decentralization and Trustworthy Machine Learning in Web3”.**
- 2019 **Honorable Mention, INFORMS Junior Faculty Interest Group (JFIG) Paper Award.**

BOOKS AND BOOK CHAPTERS

- [1] Ken Huang, Youwei Yang, Fan Zhu, **Xi Chen**, and Feng Zhu. *Web3: Blockchain, the New Economy, and the Self-Sovereign Internet*, Cambridge University Press, 2024.
- [2] Ken Huang, Yang Wang, Feng Zhu, **Xi Chen**, and Chunxiao Xing (co-edited). *Beyond AI: ChatGPT, Web3, and the Business Landscape of Tomorrow*, Springer, 2024. (Translated into Chinese; Ranked as a Best-Seller)
- [3] **Xi Chen**, Stefanus Jasin, Cong Shi (co-edited). *The Elements of Joint Learning and Optimization in Operations Management*, Springer Series in Supply Chain Management, 2022.
- [4] Eric P. Xing, Mladen Kolar, Seyoung Kim, and **Xi Chen**. *High-dimensional Sparse Structured Input-output Models, with Applications to GWAS: Practical Applications of Sparse Modeling*. (Edited by Irina Rish, Guillermo A. Cecchi, Aurelie Lozano and Alexandru Niculescu-Mizil), MIT Press, 2014.

SELECTED RECENT PUBLICATIONS

Dynamic Pricing, Revenue Management, and Platforms

- [1] Zifeng Zhao, Feiyu Jiang, Yi Yu, and **Xi Chen**. [High-Dimensional Dynamic Pricing under Non-Stationarity: Learning and Earning with Change-Point Detection](#). *Management Science* (forthcoming), 2025.
- [2] **Xi Chen**, Akshay Krishnamurthy, and Yining Wang. [Robust Dynamic Assortment Optimization in the Presence of Outlier Customers](#). *Operations Research*, 72(3), 999–1015, 2024.
- [3] **Xi Chen**, Will Ma, David Simchi-Levi, and Linwei Xin. [Assortment Planning for Recommendations at Checkout under Inventory Constraints](#). *Mathematics of Operations Research*, 49(1), 297–325, 2024.
 - The 2017 CSAMSE Annual Conference Best Paper Award (first prize).
- [4] **Xi Chen**, and Yining Wang. [Robust Dynamic Pricing with Demand Learning in the Presence of Outlier Customers](#). *Operations Research*, 71(4), 1362–1386, 2023.
- [5] Liu Zhihong, Hoang Anh Just, Xiangyu Chang, **Xi Chen**, and Ruoxi Jia. [2D-Shapley: A Framework for Fragmented Data Valuation](#). *International Conference on Machine Learning (ICML)*, 2023.

[‡]The full list of papers is available at my Google scholar profile <http://scholar.google.com/citations?user=qjJg6akAAAAJ>. Citations: 7500+ and H-index: 43

- [6] Shuting Shen, **Xi Chen**, Ethan X. Fang, Junwei Lu. [Combinatorial Inference on the Optimal Assortment in Multinomial Logit Models](#). *ACM Conference on Economics and Computation (EC)*, 2023.
- [7] **Xi Chen**, Zachary Owen, Clark Pixton and David Simchi-Levi. [A Statistical Learning Approach to Personalization in Revenue Management](#). *Management Science*, 68(3), 1923–1937, 2022.
- [8] Sentao Miao, **Xi Chen**, Xiuli Chao, Jiayi Liu, and Yidong Zhang. [Context-Based Dynamic Pricing with Online Clustering](#). *Production and Operations Management*, 31(9), 3559–3575, 2022.
 - POM Michael Pinedo Best Retail Operations and Revenue Management Paper Award.
- [9] **Xi Chen**, Yining Wang, and Yuan Zhou. [Dynamic Assortment Optimization with Changing Contextual Information](#). *Journal of Machine Learning Research*, 21(216), 1–44, 2020.
 - Honorable Mention in INFORMS Junior Faculty Interest Group Paper Award (JFIG).

Large Language Models and Trustworthy AI

- [10] Peter Chen, Xiaopeng Li, Ziniu Li, **Xi Chen**, Tianyi Lin. [Spectral Policy Optimization: Coloring your Incorrect Reasoning in GRPO](#). arXiv preprint arXiv:2505.11595, 2025.
- [11] Peter Chen, **Xi Chen**, Wotao Yin, Tianyi Lin. [ComPO: Preference Alignment via Comparison Oracles](#). In *Proceedings of the Advances in Neural Information Processing Systems (NeurIPS)*, 2025.
- [12] **Xi Chen**, David Simchi-Levi, and Yining Wang. [Utility Fairness in Contextual Dynamic Pricing with Demand Learning](#). *Management Science* (forthcoming), 2025.
- [13] Weidong Liu, Jiayuan Tu, Xiaojun Mao, and **Xi Chen**. [Majority Vote for Distributed Differentially Private Sign Selection](#). *Annals of Statistics*, 52(4), 1671–1690, 2024.
- [14] **Xi Chen**, Sentao Miao, and Yining Wang. [Differential Privacy in Personalized Pricing with Nonparametric Demand Models](#). *Operations Research*, 71(2), 581–602, 2023.
- [15] **Xi Chen**, David Simchi-Levi, and Yining Wang. [Privacy-Preserving Dynamic Personalized Pricing with Demand Learning](#). *Management Science*, 68(7), 4878–4898, 2022.
- [16] **Xi Chen**, Zishuo Zhao, Xuefeng Zhang, and Yuan Zhou. [Dynamic Car Dispatching and Pricing: Revenue and Fairness for Ridesharing Platforms](#). *International Joint Conference on Artificial Intelligence (IJCAI)*, 2022.

Blockchain, DeFi, and Quant Finance

- [17] Zishuo Zhao, **Xi Chen**, and Yuan Zhou. [Bayesian-Nash-Incentive-Compatible Mechanism for Blockchain Transaction Fee Allocation](#). *Operations Research* (forthcoming), 2025.
 - Best Paper Award for NeurIPS Workshop “Decentralization and Trustworthy Machine Learning in Web3”.
- [18] Xueqing Peng, et al. [MultiFinBen: A Multilingual, Multimodal, and Difficulty-Aware Benchmark for Financial LLM Evaluation](#). arXiv preprint arXiv:2506.14028, 2025.
- [19] **Xi Chen**, Yang Ha Cho, Yiwei Dou, and Baruch Lev. [Predicting Future Earnings Changes Using Machine Learning and Detailed Financial Data](#). *Journal of Accounting Research*, 60(2), 467–515, 2022.

- [20] Chuheng Zhang, Yifei Jin, Yuanqi Li, Jian Li, **Xi Chen**, and Pingzhong Tang. [DoubleEnsemble: A New Ensemble Method Based on Sample Reweighting and Feature Selection for Financial Data Analysis](#). *IEEE International Conference on Data Mining (ICDM)*, 2020.

Statistical Machine Learning

- [21] Weidong Liu, Jiyuan Tu, Yichen Zhang, **Xi Chen**. [Online Estimation and Inference for Robust Policy Evaluation in Reinforcement Learning](#). *Annals of Statistics*, 53(5), 2128–2152, 2025.
- [22] Elynn Chen, **Xi Chen**, Wenbo Jing, and Yichen Zhang. [Distributed Tensor Principal Component Analysis](#). *Journal of the American Statistical Association (Theory and Methods, forthcoming)*, 2025.
- [23] Rui Gao, **Xi Chen**, and Anton J. Kleywegt. [Wasserstein Distributionally Robust Optimization and Variation Regularization](#). *Operations Research*, 72(3), 1177–1191, 2024.
- [24] **Xi Chen**, Zehua Lai, He Li, and Yichen Zhang. [Online Statistical Inference for Stochastic Optimization via Gradient-free Kiefer-Wolfowitz Methods](#). *Journal of the American Statistical Association (Theory and Methods)*, 119(548), 2972–2982, 2024.
- [25] **Xi Chen**, Wenbo Jing, Weidong Liu, and Yichen Zhang. [Distributed Estimation and Inference for Semi-parametric Binary Response Models](#). *Annals of Statistics*, 52(3), 922–947, 2024.
- [26] Wanrong Zhu, **Xi Chen**, and Weibiao Wu. [Online Covariance Matrix Estimation in Stochastic Gradient Descent](#). *Journal of the American Statistical Association (Theory and Methods)*, 118(541), 393–404, 2023.
- [27] **Xi Chen**, Quanquan Liu, and Yining Wang. [Active Learning for Contextual Search with Binary Feedback](#). *Management Science*, 69(4), 2165–2181, 2023.
- [28] **Xi Chen**, Jason D. Lee, He Li, and Yun Yang. [Distributed Estimation for Principal Component Analysis: An Enlarged Eigenspace Analysis](#). *Journal of the American Statistical Association (Theory and Methods)*, 117(540), 1775–1786, 2022.
- [29] **Xi Chen**, Weidong Liu, and Yichen Zhang. [First-order Newton-type Estimator for Distributed Estimation and Inference](#). *Journal of the American Statistical Association (Theory and Methods)*, 117(540), 1858–1874, 2022.
- [30] Ilai Bistritz, Zhengyuan Zhou, **Xi Chen**, Nicholas Bambos, and Jose Blanchet. [No Weighted-Regret Learning in Adversarial Bandits with Delays](#). *Journal of Machine Learning Research*, 23(139), 1–43, 2022.
- [31] **Xi Chen**, Victor Chernozhukov, Iván Fernández-Val, Scott Kostyshka, and Ye Luo. [Shape-Enforcing Operators for Point and Interval Estimators](#). *Journal of Machine Learning Research*, 22(220), 1–42, 2021.
- [32] **Xi Chen**, Jason D. Lee, Xin T. Tong, and Yichen Zhang. [Statistical Inference for Model Parameters in Stochastic Gradient Descent](#). *Annals of Statistics*, 48(1), 251–273, 2020.
- [33] **Xi Chen** and Wen-Xin Zhou. [Robust Inference via Multiplier Bootstrap](#). *Annals of Statistics*, 48(3), 1665–1691, 2020.
- [34] **Xi Chen**, Weidong Liu, and Yichen Zhang. [Quantile Regression under Memory Constraint](#). *Annals of Statistics*, 47(6), 3244–3273, 2019.

- [35] **Xi Chen**, Kevin Jiao, and Qihang Lin. [Bayesian Decision Process for Cost-Efficient Dynamic Ranking via Crowdsourcing](#). *Journal of Machine Learning Research*, 17(216), 1–40, 2016.
- [36] Yuchen Zhang, **Xi Chen**, Dengyong Zhou, and Michael I. Jordan. [Spectral Methods Meet EM: A Provably Optimal Algorithm for Crowdsourcing](#). *Journal of Machine Learning Research*, 17(102), 1–44, 2016.
- [37] **Xi Chen**, Qihang Lin, and Dengyong Zhou. [Statistical Decision Making for Optimal Budget Allocation in Crowd Labeling](#). *Journal of Machine Learning Research*, 16, 1–46, 2015.

EXECUTIVE LEADERSHIP IN SERVICE, TEACHING, & TALENT DEVELOPMENT

EDITORIAL & PROFESSIONAL LEADERSHIP

- **Area Editor, Operations Research (Machine Learning & Data Science Department)** – Leadership role overseeing publication strategy and peer review for a top-tier journal in optimization, ML, and data-driven decision-making.
- Associate Editor roles with **JASA**, **Management Science**, and other leading journals; contributed to shaping research agendas across applied ML, statistical learning, and optimization.
- Service on major professional committees (INFORMS, ASA, ACM), including COPSS award and governance committees.

TEACHING & PROGRAM LEADERSHIP

- Developed and taught MBA/EMBA and MS/PhD curricula in **Machine Learning**, **Deep Learning**, **AI for Business**, and **Data-Driven Decision-Making**.
- Led cross-department initiatives on generative AI, ML systems, and analytics; supervised applied projects with Amazon, Meta, JPMorgan, and Adobe.

MENTORING & TALENT DEVELOPMENT

- Supervised 10+ PhD students and postdocs placed at **Amazon**, **Citadel**, and leading academic institutions.
- Mentored teams on applied ML, reinforcement learning, optimization, trustworthy AI, and fintech/crypto systems; multiple advisees received best-paper awards and competitive fellowships.

PATENTS

- 2012 **Topic Modeling & Document Ranking (NEC)**, **First inventor**; ML/NLP methods for large-scale semantic understanding and enterprise relevance optimization. .
- 2014 **Budget-Optimal Crowdsourcing (Microsoft)**, **First inventor**; online optimization and human-in-the-loop decision algorithms foundational to modern crowdsourced ML workflows. .