MINGZHANG YIN

Research areas: Machine Learning ⋄ Bayesian Statistics ⋄ Causal Inference ⋄ Quantitative Marketing
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EDUCATION

Ph.D. Statistics, The University of Texas at Austin 2015 - 2020
Advisor: Prof. Mingyuan Zhou

B.Sc. Mathematics and Applied Mathematics, Fudan University 2011 - 2015

APPOINTMENTS

Assistant Professor 2022 -
Department of Marketing, Warrington College of Business
Department of Statistics (courtesy)
The University of Florida

Postdoctoral Research Scientist 2020 - 2022
Data Science Institute, Columbia University
Advisor: Prof. David M. Blei

AFFILIATION

Artificial Intelligence Academic Initiative (AI^2) Center 2023 -

Full Member of Intelligent Critical Care Center (IC^3) 2024 -

PUBLICATIONS

* = Equal contribution

- Ruijiang Gao, **Mingzhang Yin**, Maytal Saar-Tsechansky "SEL-BALD: Deep Bayesian Active Learning for Selective Labeling with Instance Rejection." Conference on Neural Information Processing Systems (NeurIPS), 2024.
- **Mingzhang Yin**, Yixin Wang, David M. Blei. "Optimization-based Causal Estimation from Heterogenous Environments." Journal of Machine Learning Research (JMLR), 2024.
- Ruijiang Gao, **Mingzhang Yin**, James Mcinerney, Nathan Kallus. "Adjusting Regression Models for Conditional Uncertainty Calibration." Machine Learning Journal (MLJ), 2024.
- Mingyuan Zhou, Huangjie Zheng, Zhendong Wang, **Mingzhang Yin**, Hai Huang "Score identity Distillation: Exponentially Fast Distillation of Pretrained Diffusion Models for One-Step Generation." International Conference on Machine Learning (ICML), 2024.
- **Mingzhang Yin**, Claudia Shi, Yixin Wang, David M. Blei. "Conformal Sensitivity Analysis for Individual Treatment Effects." Journal of the American Statistical Association (JASA), 2023.
- Zhendong Wang*, Ruijiang Gao*, **Mingzhang Yin***, Mingyuan Zhou, David M. Blei. "Probabilistic Conformal Prediction Using Conditional Random Samples." Short version accepted by DFUQ Workshop, **Spotlight**, ICML 2022. International Conference on Artificial Intelligence and Statistics (AISTATS), 2023.

- Russell Z Kunes, **Mingzhang Yin**, Max Land, Doron Haviv, Dana Pe'er, Simon Tavaré. "Gradient Estimation for Binary Latent Variables via Gradient Variance Clipping." AAAI Conference on Artificial Intelligence (AAAI), 2022.
- Wenshuo Guo, **Mingzhang Yin**, Yixin Wang, Michael I. Jordan. "Partial Identification with Noisy Covariates: A Robust Optimization Approach." Conference on Causal Learning and Reasoning (CLeaR), 2021.
- **Mingzhang Yin**, George Tucker, Mingyuan Zhou, Sergey Levine and Chelsea Finn. "Meta-Learning without Memorization." International Conference on Learning Representations (ICLR), **Spotlight**, 2020.
- Yuguang Yue, Yunhao Tang, **Mingzhang Yin** and Mingyuan Zhou. "Discrete Action On-Policy Learning with Action-Value Critic." International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.
- **Mingzhang Yin**, YX Rachel Wang and Purnamrita Sarkar. "A Theoretical Case Study of Structured Variational Inference for Community Detection." International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.
- Siamak Zamani Dadaneh, Shahin Boluki, **Mingzhang Yin**, Mingyuan Zhou and Xiaoning Qian. "Pairwise Supervised Hashing with Bernoulli Variational Auto-Encoder and Self-Control Gradient Estimator." The Conference on Uncertainty in Artificial Intelligence (UAI), 2020
- **Mingzhang Yin***, Yuguang Yue* and Mingyuan Zhou. "ARSM: Augment-REINFORCE-Swap-Merge Estimator for Gradient Backpropagation Through Categorical Variables." International Conference on Machine Learning (ICML) 2019.
- **Mingzhang Yin** and Mingyuan Zhou. "ARM: Augment-REINFORCE-Merge Gradient for Stochastic Binary Networks." International Conference on Learning Representations (ICLR), 2019.
- **Mingzhang Yin** and Mingyuan Zhou. "Semi-implicit Variational Inference." International Conference on Machine Learning (ICML), **Long Talk**, 2018.
- **Mingzhang Yin** and Mingyuan Zhou. "Semi-Implicit Generative Model." Bayesian Deep Learning Workshop, NeurIPS 2018.
- Bowei Yan, **Mingzhang Yin** and Purnamrita Sarkar. "Convergence of Gradient EM for Multi-component Gaussian Mixture." Conference on Neural Information Processing Systems (NeurIPS) 2017.

PAPERS IN SUBMISSION

- **Mingzhang Yin**, Khaled Boughanmi, Asim Ansari. "Meta-Learning Customer Preference Dynamics on Digital Platforms." In submission, Management Science, 2024.
- **Mingzhang Yin**, Ziwei Cong, Jia Liu. "Unraveling Multifaceted User Preferences on Content Platforms: A Bayesian Deep Learning Approach." In submission, Marketing Science.
- Ryan Dew, **Mingzhang Yin**, et al. "Probabilistic Machine Learning: New Frontiers for Modeling Consumers and their Choices." Minor Revision, International Journal of Research in Marketing, 2024.
- Ruijiang Gao and **Mingzhang Yin**. Confounding-Robust Policy Improvement with Human-AI Teams. In submission; Preliminary version accepted at INFORMS Data Science Workshop, 2023
- **Mingzhang Yin**, Nhat Ho, Bowei Yan, Xiaoning Qian, Mingyuan Zhou. "Probabilistic Best Subset Selection via Gradient-Based Optimization." In submission, Journal of Machine Learning Research (JMLR); arXiv 2006.06448, 2022.
- Yang Zhao, **Mingzhang Yin**, Yixin Wang. "Ordinal Preference Optimization: Align Human Preferences via NDCG." In submission.

RECENT TALKS/PRESENTATIONS

- "Meta-Learning Customer Preference Dynamics on Digital Platforms", Marketing Dynamics Conference, Santorini, Greece Jun. 2024
- "Modeling Customer Journey with Meta-Temporal Processes", Choice Symposium, Fontainebleau, France Aug. 2023
- Invited talk. "Causal Inference in Personalization and Targeting", Criteo AI Lab, Paris Aug. 2023
- Invited talk. "Causal Machine Learning for Individual Treatment Effects", AI2Heal Datathon, University of Florida Jan. 2023
- Invited talk. "Conformal Sensitivity Analysis for Individual Treatment Effects", Statistics Seminar, University of Florida Oct. 2022
- Invited talk. "Conformal Sensitivity Analysis for Individual Treatment Effects", IROM Seminar, University of Texas at Austin Oct. 2022
- Invited talk. "Partial Identification of Causal Effects via a Modern Optimization Lens", Econometrics Seminar, Boston University Mar. 2022
- Colloquium talk. Department of Quantitative Theory & Methods, Emory University Feb. 2022
- Colloquium talk. Warrington College of Business, University of Florida Jan. 2022
- Colloquium talk. Department of Statistics, Texas A&M University Jan. 2022
- Colloquium talk. Department of Statistics, Iowa State University Jan. 2022
- Colloquium talk. University of Notre Dame, Department of Applied and Computational Mathematics and Statistics Jan. 2022.
- Colloquium talk. University of Iowa, Tippie College of Business Dec. 2021.
- Invited talk. "Machine Learning with Heterogeneous Datasets", Machine Learning Seminar, Microsoft Research, Cambridge, MA Oct. 2021
- Invited talk. "Semi-Implicit Variational Inference" *AI/ML Seminar Series*, Center for Machine Learning and Intelligent Systems, University of California, Irvine Feb. 2020
- Invited talk. "The Big Problem with Meta-Learning and How Bayesians Can Fix It, *Bayesian Deep Learning Workshop*, Vancouver Dec. 2019
- Short presentation. "Efficient Discrete Optimization with Correlated Samples", *ICML*, Long Beach June 2019
- Seminar talk. "Antithetic Sampling and Control Variates in Learning Binary Networks", *UT Austin Statistics Seminar*, Austin Dec. 2018
- Long presentation. "Black-box Variational Inference and Uncertainty Estimation", *ICML*, Stockholm July 2018

PROFESSIONAL EXPERIENCE

Research Intern, Google Research, Brain Team, Mountain View, CA May 2019–Nov 2019
Supervisor: Drs. George Tucker and Chelsea Finn

Research Intern, Quantlab Financial LLC, Houston, TX Jun. 2017–Aug. 2017
Supervisor: Dr. Joe Masters

Data Science Intern, HP Lab, Austin, TX Jun. 2016–Aug. 2016
Supervisor: Dr. Lakshminarayan Choudur

SERVICE

Area Chair: AISTATS 2023, 2024, 2025
Conference reviewing: NeurIPS 2017–2024, 2025; ICML 2019–2024; ICLR 2018–2024; AISTATS 2018, 2021; UAI 2019–2023; ACML 2018; AAAI 2018

Journal reviewing: Journal of the American Statistical Association, Annals of Applied Statistics; Journal of Machine Learning Research, Journal of Computational and Graphical Statistics, IEEE Trans. on Pattern Analysis and Machine Intelligence, Transactions on Machine Learning Research, IEEE Trans. Signal Process

Session Chair: Session of "Probabilistic Machine Learning on Unstructured Data" at ICSA 2023.

Member: American Statistical Association (ASA), 2015–present; International Society for Bayesian Analysis (ISBA), 2016–present; International Chinese Statistical Association (ICSA), 2021–present. INFORMS & ISMS membership, 2023–present.

TEACHING AND ADVISING EXPERIENCE

Instructor, Marketing Analytics II	Spring 2023, Spring 2024
Teaching Assistant, Introduction to Probability and Statistics	Fall 2017, Fall 2019
Teaching Assistant, Bayesian Statistical Methods	Spring 2016, Spring 2017
Teaching Assistant, Statistics in Market Analysis	Fall 2015, Spring 2016, Spring 2018
Teaching Assistant, Design and Analysis of Experiments	Spring 2017
Teaching Assistant, Linear Algebra	Fall 2018
Teaching Assistant, Bayesian deep learning	Spring 2019
Undergraduate Mentorship, Directed Reading Program, UT Math Department	Fall 2018, Spring 2019

SELECTED AWARDS AND HONORS

KAUST Rising Star in AI	2023
Graduate School Professional Development Award	2017, 2019
Google Archimedes Award	2019
The Graduate Continuing Bruton Fellowship	2018, 2019
Travel Award, ICLR	2019
Travel Award, ICML	2018, 2019
Travel Award, NeurIPS	2017