Ryan Feng Lin

Department of Industrial & Systems Engineering
University of Washington
Box 352650, Seattle, WA 98195-2650

(206)321-8275
ryanflin@uw.edu

Education	**University of Washington**, Seattle, WA	Expected Jun, 2026
	Ph.D., Industrial and Systems Engineering	
	Ph.D. advisor: Shuai Huang	
	Dissertation: Trustworthy Personalized Machine Learning Systems under User-System Interactions	
	University of Science and Technology of China, Hefei, China	06/2020
	M.S., Computer Science	
	Thesis: Learning with Collaborative Local Disturbance for 3D Skeleton-based Human Action Recognition	
	University of Science and Technology of China, Hefei, China	06/2017
	B.S., Statistics	
	B.S., Computer science (Double degree)	

Honors, Awards & Fellowship

Finalist in INFORMS Best Referred Paper Competition, for the paper "CrowdLLM: A Synthetic Crowd of LLM-based Decision-Makers Augmented with Generative Models" 09/2025

Meta AI Mentorship Fellowship   09/2024-09/2025

Finalist in INFORMS Best Referred Paper Competition, for the paper "Fair Collaborative Learning (FairCL): A Method to Improve Fairness amid Personalization"   10/2023

Research Interests

Methodology: machine learning and AI (LLM, generative models, etc.), uncertainty quantification, experimental design/active learning, data-driven optimization

Applications: healthcare, medicines, transportation, and marketing

Teaching Interests

AI and machine learning: machine learning foundation, deep learning (theory and algorithm), reinforcement learning; **Statistics-related courses:** design of experiments, statistical quality control, data analysis; **Optimization-related courses:** integer programming, dynamic programming, convex optimization

Publication

In this list below, I indicate with:
[†] co-first author
($\star$) graduate students I mentor as co-authors
For peer-reviewed conferences, acceptance rates are shown whenever available.

Refereed Journal Papers

[1] Congjing Zhang[†]($\star$), **Ryan F. Lin**[†], Xinyi Zhao, Pei Guo, Wei Li, Lin Chen, Chaoyue Zhao, and Shuai Huang, "ALARM: Automated LLM-Based Anomaly Detection in SmaRt-Home Monitoring with Uncertainty Quantification". Under review at *INFORMS Journal on Data Science*.

[2] **Ryan F. Lin**[†], Keyu Tian[†], Congjing Zhang($\star$), Hanming Zheng, Li Zeng, and Shuai Huang, "CrowdLLM: A Synthetic Crowd of LLM-based Decision-Makers Augmented with Generative Models". In submission to *INFORMS Journal on Data Science*. (Finalist of INFORMS QSR Best Paper Competition, 2025)

[3] **Ryan F. Lin**, Chaoyue Zhao, Xiaoning Qian, Kendra Vehik, and Shuai Huang, "Fair Collaborative Learning (FairCL): A Method to Improve Fairness amid Personalization", *INFORMS Journal on Data Science*, 4(1), pp.67-84. 2025. (Finalist of INFORMS QSR Best Paper Competition, 2023)

[4] **Ryan F. Lin**, Xiaoning Qian, Bobak Mortazavi, Zhangyang Wang, Shuai Huang, and Cynthia Chen, "Modeling User Choice Behavior under Data Corruption: Robust

Learning of the Latent Decision Threshold Model", *IISE transactions*, 56(12), pp. 1307-1320. 2024.

Peer-Reviewed Conference Papers

[5] Congjing Zhang[†](⋆), **Ryan F. Lin**[†], and Shuai Huang, "Team, then Trim: An Assembly-Line LLM Framework for High-Quality Tabular Data Generation". Under review at *the 14th International Conference on Representation Learning (ICLR)*.

– Average acceptance rate around <u>31%</u> in the past years.

[6] Yunkai Zhang, Qiang Zhang, Diji Yang, **Ryan F. Lin**, Ruizhong Qiu, Benyu Zhang, Hanchao Yu, Jason Liu, Yinglong Xia, Zhuokai Zhao, Lizhu Zhang, Xiangjun Fan, Zhuoran Yu, Abhishek Kumar, and Zeyu Zheng , "Enhancing Generative Recommender Systems via Structured Human Priors with Multi-head Decoding". Under review at *the 2026 ACM Web Conference (WWW)*.

– Average acceptance rate around <u>20%</u> in the past years.

[7] Junyuan Hong, Huanhuan Chen, and **Ryan F. Lin**, "Disturbance Grassmann Kernels for Subspace-Based Learning", *Proceedings of the 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, pp. 1521-1530. 2018.

– Acceptance rate <u>18.4%</u> in year of submission.

Papers in Submission (full preprints expected shortly)

[8] **Ryan F. Lin**, Ji Liu, and Shuai Huang, "Learning to Collect: A Two-Stage Data Collection Framework for Data-Efficient Personalization". To be submitted to *INFORMS Journal on Data Science*.

[9] **Ryan F. Lin**[†], Congjing Zhang[†](⋆), Kendra Vehik, Hemang Parikh, Mingqian Li, Richard Oram, Xiaoning Qian, and Shuai Huang, "Benchmarking Fairness of Genetic Risk Score Models for Early-stage Prediction of Type 1 Diabetes from the TEDDY study". *To be submitted to JAMA Network Open*.

[10] **Ryan F. Lin**, Xufeng Cai, Lei Yuan, Boying Liu, Ali Selman Aydin, Ziwei Guan, Wenbo Ren, Yuting Zhang, Qunshu Zhang, Shuai Huang, Yinglong Xia, and Ji Liu, "Robust Contextual Optimization for Personalization". *To be submitted to KDD 2026*.

[11] **Ryan F. Lin**, Xiaoning Qian, and Shuai Huang, "Relieving the Myopia: Bayesian Active Learning by Mean Objective Cost of Uncertainty with Confidence Ascending". *To be submitted to ICML 2026*.

[12] Yuantao Wei[†](⋆), **Ryan F. Lin**[†], and Shuai Huang, "Learning Causal Graph from Human Knowledge: A Mixture-of-Chains Framework". *To be submitted to Journal of Machine Learning Research*.

Teaching Experience	**Instructor**, IND E 412 Integer & Dynamic Programming (Enrollment:23; Overall Rating: 3.3/5.0; Response Rate: 74%)	03/2024 - 06/2024
	Teaching assistant IND E 427&527 Data Analytics For Systems Engineering (Enrollment: 47)	09/2025-Present
	IND E 310 Linear & Network Programming (Enrollment: 55)	09/2023-12/2023
Mentoring Experience	Yuantao Wei, *Master's student in ISE* Topic: Causal inference, Online learning	05/2025-Present
	Congjing Zhang, *PhD student in ISE* Topic: Large Language Models for Decision-making	08/2023-Present

Grant Writing Participation	**National Science Foundation (NSF)**

National Science Foundation (NSF)

[1] Collaborative Research: SCH: VR-Assisted Digital Twin of Nurse Fatigue
(PI: Dr. Shuai Huang; pending)

[2] Collaborative Research: FDT-BioTech: A Personalizable, Self-Improving Digital Twin for Disease-Resilient Lifestyle of the Genetically Predisposed
(PI: Dr. Shuai Huang; pending)

[3] Collaborative Research: SCH: Model Disease Progression by Human-AI Collaboration
(PI: Dr. Shuai Huang; pending)

[4] SCC-IRG Track 1: Socially-integrated Robust Communication and Information-resource Sharing Technologies for Post-disaster Community Self Reliance
(PI: Dr. Cynthia Chen; funded)

Intelligence Advanced Research Projects Activity (IARPA)

[5] Translating Fine-grained Human Trajectories into Intelligence by Meaning-making and Reference Matching   (PI: Dr. Shuai Huang; unfunded)

Meta Platforms Inc.

[6] Optimal Decision in Recommendation   (PI: Dr. Shuai Huang; funded)

Amazon.com Inc.

[7] A Digital Twin Framework for Smart Pricing   (PI: Dr. Shuai Huang; funded)

U.S. Army AI Integration Center (AI2C)

[8] Whitepaper: From Ambiguity to Action: Dynamic Human-LLM Teaming for Multi-Modal Anomaly Detection   (PI: Dr. Shuai Huang; pending)

Talks & Presentations

[1] (forthcoming) CrowdLLM: A Synthetic Crowd of LLM-based Decision-Makers Augmented with Generative Models, *INFORMS Annual Meeting*, 2025, Atlanta, GA.

[2] (forthcoming) Learning to Collect: A Two-Stage Data Collection Framework for Data-Efficient Personalization, *INFORMS Annual Meeting*, 2025, Atlanta, GA.

[3] (forthcoming) Bayesian Active Learning by Confidence Gradient-based Mean Objective Cost of Uncertainty, *INFORMS Annual Meeting*, 2025, Atlanta, GA.

[4] Create a Digital Population at Scale with Large Language Models (LLMs) and Generative AI through the CrowdLLM Framework, *Graduate Seminar, Department of Industrial and Systems Engineering, University of Washington*, 2025, Atlanta, GA.

[5] Reliving the Myopia: Bayesian Active Learning by Confidence Gradient Mean Objective Cost of Uncertainty, *Quality and Productivity Research Conference(QPRC)*, 2025, Seattle, WA.

[6] Benchmarking Fairness of Genetic Risk Score Models for Early-stage Prediction of Type 1 Diabetes from the TEDDY study, *INFORMS Annual Meeting*, 2024, Seattle, WA.

[7] Fairness Amid Personalization: Battling Disparity through Fair Collaborative Learning (FairCL), *Graduate Seminar of Department of Industrial and Systems Engineering, University of Washington*, 2024, Seattle, WA.

[8] (poster) Genetic Risk Score for Type 1 Diabetes across Ethnic Populations via Multitask Learning, *American Diabetes Association (ADA) Scientific Sessions*, 2024, Orlando, FL.

[9] Fair Collaborative Learning (FairCL): A Method to Improve Fairness amid Personalization, *INFORMS Annual Meeting*, 2023, Phoenix, AZ.

Working Experience

Biostatistician (Internship)	Mayo Clinic	06/2022-09/2022
Visiting researcher	Meta Platforms Inc.	09/2024-09/2025
Research assistant	University of Washington	01/2021-Present

Conference Organization	[1] *Session Chair*, "Integration of Human, Knowledge and Systems for Quality and Personalized Decision-making", INFORMS Annual Meeting, 2025.
	[2] *Session Co-Chair*, "Data-Driven vs. Rule-Based: Bridging the Gap for Real-World Applications", INFORMS Annual Meeting, 2025.
	[3] *Session Chair*, "Integration of Human, Knowledge and Systems for Quality", INFORMS Annual Meeting, 2024.
	[4] *General Chair*, China R Conference (Hefei), 2017
	[5] *Program Committee Member*, International Workshop on Nature Inspired Computation and Applications, Hefei, 2017

Reviewer	**Journal**
	IEEE Transactions on Automation Science and Engineering
	INFORMS Journal on Data Science
	IISE Transactions on Healthcare Systems Engineering
	IEEE Transactions on Artificial Intelligence
	IEEE Transactions on Neural Networks and Learning Systems
	IEEE Transactions on Emerging Topics in Computing
	Computers & Industrial Engineering
	Conference
	ISMB/ECCB 2021

Membership	Institute for Operations Research and the Management Sciences (INFORMS)
	Quality, Statistics, and Reliability (QSR) at INFORMS
	Data Mining (DM) at INFORMS
	Institute of Industrial and Systems Engineers (IISE)
	American Statistical Association (ASA)
	Institute of Electrical and Electronics Engineers (IEEE)