

Zijun Yao

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RESEARCH INTERESTS

AI/ML, Data Mining, Health Informatics

EDUCATION

- **Ph.D. in Information Technology** (2018)
Dissertation: Mobile Intelligence Analytics for Urban Smart Living
Advisor: Dr. Hui Xiong
Rutgers, the State University of New Jersey, NJ
- **M.S. in Computer Engineering** (2011)
Northeastern University, MA
- **B.E. in Electrical Engineering** (2009)
Guangdong University of Technology, China

PROFESSIONAL APPOINTMENTS

Since Ph.D. Graduation

- **Assistant Professor** (August 2021 - present)
Department of Electrical Engineering & Computer Science
University of Kansas
Lawrence, KS
- **Research Scientist** (June 2018 - August 2021)
Center for Computational Health
IBM Research
Yorktown Heights, NY

Pre-Ph.D. Professional Experience

- **Research Intern** (May 2017 - August 2017)
Advertising Science Group
Yahoo Research
Sunnyvale, CA
- **Research Intern** (June 2016 - August 2016)
Artificial Intelligence Lab
Technicolor
Los Altos, CA
- **Research Intern** (June 2014 - August 2014 & June 2015 - August 2015)
Research & Innovation Department
InterDigital
King of Prussia, PA
- **Quantitative Analyst Intern** (March 2012 - May 2012)
Data Integration Group
Nielsen Media Research
New York, NY

HONORS & AWARDS

- NSF CAREER Award, 2026
- NSF EPSCoR Research Fellows Award, 2026
- KU New Faculty Research Development Award, 2023
- IBM Research Accomplishments Award, 2020
- IBM First Patent Application Innovation Achievement Award, 2020
- International Joint Conference on Artificial Intelligence (IJCAI) Travel Award, 2018
- ACM International Conference on Web Search and Data Mining (WSDM) Travel Award, 2018
- IEEE International Conference on Data Mining (ICDM) Travel Award, 2016
- SIAM International Conference on Data Mining (SDM) Travel Award, 2016
- Dean's Scholarship for Summer Research, Rutgers University, 2014

COURSES TAUGHT

- **330 Data Structures and Algorithms** (Fall 2023, 2024)
EECS Department, University of Kansas
- **568 Introduction to Data Mining** (Fall 2021, 2022, 2023, 2024, 2025; Spring 2026)
EECS Department, University of Kansas
- **836 Machine Learning** (Spring 2022, 2023, 2024, 2025, 2026)
EECS Department, University of Kansas

Courses span core undergraduate (EECS 330), AI-certificate elective (EECS 568), and graduate (EECS 836).

PH.D. STUDENT ADVISING

1. **Arya Hadizadeh Moghaddam**, Computer Science, 2022 - present. Passed Qualifying Exam Dec 2023; Summer 2025 intern at Two Sigma; Passed Comprehensive Exam Dec 2025; Summer 2026 intern at Two Sigma; Expected graduation May 2027
2. **Mohsen Nayebi Kerdabadi**, Computer Science, 2023 - present. Passed Qualifying Exam Dec 2024; Summer 2025 intern at Capital One; Passed Comprehensive Exam May 2026; Summer 2026 intern at Capital One; Expected graduation May 2028
3. **Drew Ross**, Computer Science, 2025 - present
4. **Chen Chen**, Computer Science, 2025 - present

PUBLICATIONS

Summary & Highlights

- 2,167+ Citations (Google Scholar: scholar.google.com/citations?user=3RU4Yc8AAAAJ, May 2026)
- 17 H-index (Google Scholar, May 2026)

★ denotes Ph.D. students for whom I have been serving as a dissertation advisor.

Publications at the University of Kansas (2021 - present)

1. Mohsen Nayebi Kerdabadi*, Arya Hadizadeh Moghaddam*, Chen Chen*, Dongjie Wang, **Zijun Yao**. "Text-Attributed Knowledge Graph Enrichment with Large Language Models for Medical Concept Representation." *Annual Meeting of the Association for Computational Linguistics (ACL)*, 2026.
2. Arya Hadizadeh Moghaddam*, Drew Ross*, Mohsen Nayebi Kerdabadi*, Dongjie Wang, **Zijun Yao**. "RePromptT: Recurrent Prompt Tuning for Integrating Structured EHR Encoders with Large Language Models." *Findings of the Association for Computational Linguistics: ACL (ACL Findings)*, 2026.

3. Arya Hadizadeh Moghaddam*, Mohsen Nayebi Kerdabadi*, Dongjie Wang, Mei Liu, **Zijun Yao**. "User-Adaptive Meta-Learning for Cold-Start Medication Recommendation with Uncertainty Filtering." *IEEE International Conference on Data Engineering (ICDE)*, 2026.
4. Amulya Gupta, Christopher J. Harvey, Ashley DeBauge, Sumaiya Shomaji, **Zijun Yao**, Yongkuk Lee, Amit Noheria. "Machine Learning to Classify Left Ventricular Hypertrophy using Electrocardiographic Feature Extraction by Variational Autoencoder." *Heart Rhythm O2*, 2026.
5. Christopher Harvey, Sumaiya Shomaji, **Zijun Yao**, Amit Noheria. "ECG Latent Feature Extraction with Autoencoders for Downstream Prediction Tasks." *IEEE Signal Processing in Medicine and Biology Symposium*, 2025.
6. Mohsen Nayebi Kerdabadi*, Arya Hadizadeh Moghaddam*, Dongjie Wang, **Zijun Yao**. "Multi-Ontology Integration with Dual-Axis Propagation for Medical Concept Representation." *ACM International Conference on Information and Knowledge Management (CIKM)*, 2025.
7. Yanping Wu, Yanyong Huang, **Zijun Yao**, Yanjie Fu, Kunpeng Liu, Xiao Luo, Dongjie Wang. "Adaptive Context-Infused Performance Evaluator for Iterative Feature Space Optimization." *ACM International Conference on Information and Knowledge Management (CIKM)*, 2025.
8. Xi Chen, Jeffrey Thompson, **Zijun Yao**, Joseph C. Cappelleri, Jonah Amponsah, Rishav Mukherjee, Jinxiang Hu. "Explainable AI predicting Alzheimer's disease with latent multimodal deep neural networks." *Journal of Biopharmaceutical Statistics*, 2025.
9. Deyi Li, **Zijun Yao**, Muxuan Liang, Mei Liu. "DeepJ: Graph Convolutional Transformers with Differentiable Pooling for Patient Trajectory Modeling." *American Medical Informatics Association Annual Symposium (AMIA)*, 2025.
10. Rui Liu, Rui Xie, **Zijun Yao**, Yanjie Fu, Dongjie Wang. "Continuous Optimization for Feature Selection with Permutation-Invariant Embedding and Policy-Guided Search." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2025.
11. Amulya Gupta, Christopher J. Harvey, Uzair Mahmood, Jacob Baer, Nikhil Parimi, Ashutosh Bapat, Seth H. Sheldon, Madhu Reddy, **Zijun Yao**, Yongkuk Lee, Amit Noheria. "QRS 3D Voltage-Time Integral in Narrow QRS Complex—Establishing the Normal Reference Range." *Journal of Electrocardiology*, 2025.
12. Ling Zhang, **Zijun Yao**, Arya Hadizadeh Moghaddam*. "Designing GenAI Tools for Personalized Learning Implementation: Theoretical Analysis and Prototype of a Multi-Agent System." *Journal of Teacher Education*, 2025.
13. Jinxiang Hu, Mohsen Nayebi Kerdabadi*, Xiaohang Mei, Joseph Cappelleri, Richard Barohn, **Zijun Yao**. "Recurrent Neural Networks and Attention Scores for Personalized Prediction and Interpretation of Patient-Reported Outcomes." *Journal of Biopharmaceutical Statistics*, 2025.
14. Arya Hadizadeh Moghaddam*, Mohsen Nayebi Kerdabadi*, Bin Liu, Mei Liu, **Zijun Yao**. "Discovering Time-Aware Hidden Dependencies with Personalized Graphical Structure in Electronic Health Records." *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2024.
15. Arya Hadizadeh Moghaddam*, Mohsen Nayebi Kerdabadi*, Mei Liu, **Zijun Yao**. "Contrastive Learning on Medical Intents for Sequential Prescription Recommendation." *ACM International Conference on Information and Knowledge Management (CIKM)*, 2024.
16. Arya Hadizadeh Moghaddam*, Mohsen Nayebi Kerdabadi*, Cuncong Zhong, **Zijun Yao**. "Meta-Learning on Augmented Gene Expression Profiles for Enhanced Lung Cancer Detection." *American Medical Informatics Association Annual Symposium (AMIA)*, 2024.
17. Zeyan Liu, **Zijun Yao**, Fengjun Li, Bo Luo. "On the Detectability of ChatGPT Content: Benchmarking, Methodology, and Evaluation through the Lens of Academic Writing." *ACM Conference on Computer and Communications Security (CCS)*, 2024.
18. Mohsen Nayebi Kerdabadi*, Arya Hadizadeh Moghaddam*, Bin Liu, Mei Liu, **Zijun Yao**. "Contrastive Learning of Temporal Distinctiveness for Survival Analysis in Electronic Health Records." *ACM International Conference on Information and Knowledge Management (CIKM)*, 2023.

19. **Zijun Yao**, Bin Liu, Fei Wang, Daby Sow, Ying Li. "Ontology-Aware Prescription Recommendation in Treatment Pathways using Multi-Evidence Healthcare Data." *ACM Transactions on Information Systems (TOIS)*, 2023.
20. Ishrak Hayet*, **Zijun Yao**, Bo Luo. "Invernet: An Inversion Attack Framework to Infer Fine-Tuning Datasets through Word Embeddings." *Findings of the Association for Computational Linguistics: EMNLP (EMNLP Findings)*, 2022.
21. Dinuka Rajapakse, Josh Meckstroth, Dylan T. Jantz, Kyle Vincent Camarda, **Zijun Yao**, Kevin C. Leonard. "Deconvoluting Kinetic Rate Constants of Catalytic Substrates from Scanning Electrochemical Approach Curves with Artificial Neural Networks." *ACS Measurement Science Au*, 2022.
22. **Zijun Yao**, Deguang Kong, Miao Lu, Xiao Bai, Jian Yang, Hui Xiong. "Multi-View Multi-Task Campaign Embedding for Cold-Start Conversion Rate Forecasting." *IEEE Transactions on Big Data (TBD)*, 2022.
23. Chunyu Liu, Yongjian Yang, **Zijun Yao**, Yuanbo Xu, Weitong Chen, Lin Yue, Haomeng Wu. "Discovering Urban Functions of High-Definition Zoning with Continuous Human Traces." *ACM International Conference on Information and Knowledge Management (CIKM)*, 2021.
24. Liuyi Yao, **Zijun Yao**, Jianying Hu, Jing Gao, Zhaonan Sun. "Deep Staging: An Interpretable Deep Learning Framework for Disease Staging." *IEEE International Conference on Healthcare Informatics (ICHI)*, 2021.
25. Mohamed Ghalwash, **Zijun Yao**, Prithwish Chakraborty, James Codella, Daby Sow. "Phenotypical Ontology Driven Framework for Multi-Task Learning." *ACM Conference on Health, Inference, and Learning (CHIL)*, 2021.
26. Yong Ge, **Zijun Yao**, Huayu Li. "Computing Co-location Patterns in Spatial Data with Extended Objects: a Scalable Buffer-based Approach." *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2021.
27. James Codella, Hillol Sarker, Prithwish Chakraborty, Mohamed Ghalwash, **Zijun Yao**, Daby Sow. "eXITs: An Ensemble Approach for Imputing Missing EHR Data." *IEEE International Conference on Healthcare Informatics (ICHI)*, 2019.
28. **Zijun Yao**, Yanjie Fu, Bin Liu, Wangsu Hu, Hui Xiong. "Representing Urban Functions through Zone Embedding with Human Mobility Patterns." *International Joint Conference on Artificial Intelligence (IJCAI)*, 2018.
29. **Zijun Yao**, Yifan Sun, Weicong Ding, Nikhil Rao, Hui Xiong. "Dynamic Word Embeddings for Evolving Semantic Discovery." *ACM International Conference on Web Search and Data Mining (WSDM)*, 2018.
30. Wangsu Hu, **Zijun Yao**, Sen Yang, Shuhong Chen, Peter J. Jin. "Discovering Urban Travel Demands through Dynamic Zone Correlation in Location-Based Social Networks." *European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2018.
31. **Zijun Yao**, Yanjie Fu, Bin Liu, Yanchi Liu, Hui Xiong. "POI Recommendation: A Temporal Matching between POI Popularity and User Regularity." *IEEE International Conference on Data Mining (ICDM)*, 2016. [Full paper]
32. **Zijun Yao**, Yanjie Fu, Bin Liu, Hui Xiong. "The Impact of Community Safety on House Ranking." *SIAM International Conference on Data Mining (SDM)*, 2016.
33. Benjamin Falchuk, Euthimios Panagos, KC Lee, Shoshana Loeb, **Zijun Yao**. "Just-in-time Reconnaissance and Assistance for Video Game Streams and Players." *IEEE Annual Consumer Communications & Networking Conference*, 2016.
34. Yanjie Fu, Hui Xiong, Yong Ge, Yu Zheng, **Zijun Yao**, Zhi-Hua Zhou. "Modeling of Geographical Dependencies for Real Estate Ranking." *ACM Transactions on Knowledge Discovery from Data (TKDD)*, 2016.

35. Bin Liu, Hui Xiong, Spiros Papadimitriou, Yanjie Fu, **Zijun Yao**. "A General Geographical Probabilistic Factor Model for Point of Interest Recommendation." *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2015.
36. Yanjie Fu, Yong Ge, Yu Zheng, **Zijun Yao**, Yanchi Liu, Hui Xiong, Nicholas Jing Yuan. "Sparse Real Estate Ranking with Online User Reviews and Offline Moving Behaviors." *IEEE International Conference on Data Mining (ICDM)*, 2014.
37. Yanjie Fu, Hui Xiong, Yong Ge, **Zijun Yao**, Yu Zheng, Zhi-Hua Zhou. "Exploiting Geographic Dependencies for Real Estate Appraisal." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2014.
38. Yanjie Fu, Bin Liu, Yong Ge, **Zijun Yao**, Hui Xiong. "User Preference Learning with Multiple Information Fusion for Restaurant Recommendation." *SIAM International Conference on Data Mining (SDM)*, 2014.
39. Bin Liu, Yanjie Fu, **Zijun Yao**, Hui Xiong. "Learning Geographical Preferences for Point-of-Interest Recommendation." *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD)*, 2013.

PATENTS

1. Zhaonan Sun, Liuyi Yao, **Zijun Yao**, Jianying Hu, "Generation of a Disease Status Index Using a Probabilistic Model and Observational Data," U.S. Patent No. 11,830,625 B2, granted Nov. 28, 2023. Assignee: International Business Machines Corporation.
2. Mohamed Ghalwash, **Zijun Yao**, Prithwish Chakraborty, James V. Codella, Daby M. Sow, "System for Generating Specialized Phenotypical Embedding," U.S. Patent No. 11,681,726 B2, granted June 20, 2023. Assignee: International Business Machines Corporation.

INVITED TALKS

1. "Knowledge Graphs, Meta-Learning, and LLMs: Bridging AI Algorithms and Biomedical Discovery," Stowers Institute for Medical Research, Kansas City, KS, August 2025.
2. "Meta-Learning on Augmented Gene Expression Profiles for Enhanced Lung Cancer Detection," Stowers Institute for Medical Research, Kansas City, KS, October 2024.
3. "Enhancing Personalization, Transparency, and Trustworthiness in Longitudinal Healthcare Recommender Systems," Research Seminar, University of Arkansas, Fayetteville, AR, April 2024.
4. "Ontology-Aware Prescription Recommendation in Treatment Pathways using Multi-Evidence Healthcare Data," 16th Innovations in Design Analysis and Dissemination (IDAD): Frontiers in Biostatistics & Data Science, Kansas City, KS, April 2023.

AWARDED GRANTS AND CONTRACTS

Federal

1. Title: CAREER: An Integrated Machine Learning Framework for Longitudinal Healthcare Intelligence: Representation, Alignment, and Robustness
Role: solo PI
Amount: \$550,357
Source: NSF
Period: 06/01/2026 - 05/31/2031
2. Title: EPSCoR Research Fellows: NSF: Enhancing Trust in Healthcare Decisions with Data-Resilient Learning Methods
Role: solo PI
Amount: \$298,221
Source: NSF
Period: 05/01/2026 - 04/30/2028

Foundation

3. Title: Deep AI Encoded ECGs for Cardiovascular Health Prediction and Explainability
Role: Subaward Co-Investigator (with PI Amit Noheria at KU Medical Center)
Amount: \$300,000 (Subaward Amount: \$57,723)
Source: American Heart Association (AHA)
Period: 07/01/2024 - 06/30/2027
4. Title: Enhancing Digital Learning Outcomes through Personalized Content Recommendation
Role: Subaward Co-Investigator (with PI Ling Zhang at University of Wyoming)
Amount: \$50,000 (Subaward Amount: \$25,000)
Source: Gates Foundation
Period: 07/01/2024 - 06/30/2025

Industry & Institutional

5. Title: AuditAgent - An LLM Powered Tool for Bioanalytical Report Processing
Role: solo PI
Amount: \$40,287
Source: BioData Inc.
Period: 06/01/2026 - 05/31/2027
6. Title: Developing A Multi-Agent System to Enhance AI-Human Collaboration in IEP Development for Students with Disabilities
Role: solo PI
Amount: \$70,000
Source: University of Wyoming
Period: 01/01/2025 - 12/31/2025

SERVICE

Department Committee

- Faculty Awards Committee at EECS Department in KU, 2024 - 2025
- Faculty Search Committee at EECS Department in KU, 2022 - 2024
- Graduate Studies Committee at EECS Department in KU, 2021 - 2024

Conference Program Committee

- Program Committee, Conference on Neural Information Processing Systems (NeurIPS), 2026
- Program Committee/Area Chair, ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2021 - 2026
- Program Committee, Annual Meeting of the Association for Computational Linguistics (ACL), 2023 - 2026
- Program Committee, International Joint Conference on Artificial Intelligence (IJCAI), 2021 - 2026
- Program Committee, AMIA Knowledge Discovery and Data Mining (AMIA-KDDM), 2021 - 2024
- Program Committee, The ACM Web Conference (WWW), 2023
- Program Committee, AAAI Conference on Artificial Intelligence (AAAI), 2021 - 2022

Funding Agency Panelist

- NSF Future Core, 2026
- NSF Core Small, 2026
- NSF Core Medium, 2024
- NSF CRIL, 2024
- NSF Core Small, 2022
- NSF Graduate Research Fellowship Program (GRFP), 2022