KE YANG

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CURRENT AFFILIATIONS

Assistant Professor
Department of Computer Science,
College of Sciences,
The University of Texas at San Antonio   Aug, 2023 - current

Founding Faculty
Cohort for AI REsponsibility (CAREAI),
The University of Texas at San Antonio   Sep, 2023 - current

Core Faculty
School of Data Science,
The University of Texas at San Antonio   Sep, 2023 - current

Faculty Member
AI Consortium for Human Well-being (MATRIX),
The University of Texas at San Antonio   Oct, 2023 - current

PAST ACADEMIC APPOINTMENTS

Postdoctoral Research Associate
Manning College of Information & Computer Sciences,
University of Massachusetts Amherst   Sep, 2021 - Aug, 2023

Postdoctoral Fellow
Center for Data Science,
University of Massachusetts Amherst   Sep, 2021 - Aug, 2023

Visiting Scholar
Tandon School of Engineering,
New York University   2021 - 2022

RESEARCH INTEREST

My work is broadly in the areas of *AI trustworthiness, responsibility and safety, data management, machine learning,* and *human-centered data science.* In particular, I focus on topics such as *hallucination of Large Language Models, explainable AI,* and *algorithmic accountability.* Other areas of focus include *AI and machine learning education* and public engagement.

EDUCATION

Ph.D. in Computer Science, New York University   2019 - 2021
- Advisor: Julia Stoyanovich, GPA 3.9/4.0
- Thesis: Fairness, diversity, and interpretability in ranking
- Committee: Julia Stoyanovich (chair), Daniel Neill, Oded Nov, and Sebastian Schelter

Ph.D. candidate in Computer Science, Drexel University (transferred)   2015 - 2018
- Advisor: Julia Stoyanovich, GPA 3.98/4.0

M.S. in Computer Science, Beijing Technology and Business University,   2012 - 2015
- Advisors: Qian Mo and Zhongming Han, GPA 3.51/4.0
- Thesis: Detecting web spammers in online shopping websites
- Graduated *summa cum laude*

B.Eng. in Software Engineering, Beijing Technology and Business University   2008 - 2012
- Advisor: Qian Mo, GPA 3.45/4.0
- Graduated *summa cum laude*

PAST PROFESSIONAL EXPERIENCE

Postdoctoral Research Associate
Manning College of Information & Computer Sciences,
University of Massachusetts Amherst, MA, U.S.A.   2021 - 2023
- Supervisor and co-PI: Alexandra Meliou
- Fully funded by CDS Postdoctoral Fellowship
- Selected publication: Non-Invasive Fairness in Learning through the Lens of Data Drift, 2023

Graduate Research Assistant
VIDA Research Center, New York University, NY, U.S.A.   2019 - 2021

- Supervisor: Julia Stoyanovich
- Fully funded by a graduate research assistantship
- Selected publication: Fairness in Ranking: A Survey, 2021 (received 145 citations until Aug, 2023)
- More of my past projects on dataresponsibly.github.io I built for the lab during graduate school.

Research Intern
AT&T Labs, New York City, NY, U.S.A.   2019
- Supervisors: Emily Dodwell, Ritwik Mitra, and Balachander Krishnamurthy
- Project: Fairness and transparency in machine learning

Graduate Research Assistant
College of Computing & Informatics, Drexel University, PA, U.S.A.   2015 - 2018
- Supervisor: Julia Stoyanovich
- Fully funded by a graduate research assistantship
- Selected publication:
> Measuring Fairness in Ranked Outputs, 2017 (received 341 citations until Aug, 2023)
> A Nutritional Label for Rankings, 2018 (received 113 citations until Aug, 2023)

Research engineer
Elite & Resource (start-up company), Beijing, China   2014 - 2015
- Supervisor: Peng Sun
- Project: Preventing flood disasters using machine learning
- Results have been integrated as a core component of a national data management system for floor disasters

Graduate Research Assistant
Beijing Technology and Business University, Beijing, China   2012 - 2015
- Supervisors: Zhongming Han and Qian Mo
- Fully funded by a graduate research assistantship
- Selected publication:
> Overview of Web Spammer Detection, 2013 (published in a top-tier computer science journal in Chinese)
> Analyzing Spectrum Features of Weight User Relation Graph to Identify Large Spammer Groups in Online Shopping Websites, 2015 (published in a top-tier computer science journal in Chinese)

PUBLICATIONS

Peer-reviewed Conference Publications

1. Md Sohanur Rahman, Yuexia Zhang, Anthony Rios, and **Ke Yang**. Extracting Causal Relational Rules for Medical Question-Answering Tasks using Large Language Models. Workshop on Generative AI for Smart and Connected Health: Innovations, Challenges, and Applications (GenAI4SCH), co-located with IEEE/ACM conference on Connected Health: Applications, Systems and Engi-

neering Technologies **(CHASE 2025)**, New York, USA, regular short paper.

2. Hilal Pataci, **Ke Yang**, and Anthony Rios. Empowering Privacy Policy Understanding and Accessibility in Smart Home Devices. **INFORMS 2024**, presented as a poster.

3. Youmi Suk and **Ke Yang**. Using Conditional Tabular Generative Adversarial Networks for process data generation in Monte Carlo simulation studies. Paper presented at the International Meeting of Psychometric Society (**IMPS 2024**), Prague, Czech Republic.

4. **Ke Yang** and Alexandra Meliou. Non-Invasive Fairness in Learning through the Lens of Data Drift. IEEE International Conference on Data Engineering **(ICDE 2024)**, Utrecht, Netherlands.

5. **Ke Yang**. DEEILS: Data Ethics Embedded Interactive Learning System for Computer Science Students. The Technical Symposium on Computer Science Education **(SIGCSE TS 2024)**, Portland, Oregon, United States, presenting as a lighting talk for junior faculty.

6. **Ke Yang**, Joshua R. Loftus, and Julia Stoyanovich. Causal Intersectionality and Fair Ranking. Symposium on Foundations of Responsible Computing, (**FORC 2021**), Virtual Conference.

7. Meike Zehlike, **Ke Yang**, and Julia Stoyanovich. Mapping Normative Frameworks to Fair Ranking. ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (**EAAMO 2021**), presented as a poster.

8. **Ke Yang**, Vasilis Gkatzelis, and Julia Stoyanovich. Balanced Ranking with Diversity Constraints. International Joint Conference on Artificial Intelligence (**IJCAI 2019**), Macao, China.

9. **Ke Yang**, Julia Stoyanovich, Abolfazl Asudeh, Bill Howe, H.V. Jagadish, and Gerome Miklau. A Nutritional Label for Rankings. ACM International Conference on Management of Data (**SIGMOD 2018 Demonstration**), Houston, USA.

10. Julia Stoyanovich, **Ke Yang**, H.V. Jagadish. Online Set Selection with Fairness and Diversity Constraints. International Conference on Extending Database Technology (**EDBT 2018**), Vienna, Austria.

11. **Ke Yang** and Julia Stoyanovich. Measuring Fairness in Ranked Outputs. International Conference on Scientific and Statistical Database Management (**SSDBM 2017**), Chicago, USA.

Peer-reviewed Journal Publications

12. Zehlike Meike, **Ke Yang**, and Julia Stoyanovich. Fairness in Ranking, Part I: Score-based Ranking. ACM Computing Surveys (**CSUR 2022**).

13. Zehlike Meike, **Ke Yang**, and Julia Stoyanovich. Fairness in Ranking, Part II: Learning-to-Rank and Recommender Systems. ACM Computing Surveys (**CSUR 2022**).

14. Zhongming Han, **Ke Yang**, and Xusheng Tan. Analyzing Spectrum Features of Weight User Relation Graph to Identify Large Spammer Groups in Online Shopping Websites. **Chinese Journal of Computers**, 40(4): 939-954 (2017) (in Chinese).

15. Zhongming Han, **Ke Yang**, Fengmin Xu, and Dagao Duan. Probabilistic Graphical Model for Detecting Spammers in Microblog Websites. **Journal of Embedded Systems**, 8(1): 12-23 (2016).

16. Qian Mo and **Ke Yang**. Overview of Web Spammer Detection. **Chinese Journal of Software**, 25(7): 1505-1526 (2014) (in Chinese).

Peer-reviewed Workshops

17. **Ke Yang**, Biao Huang, Julia Stoyanovich, and Sebastian Schelter. Fairness-Aware Instrumentation of Preprocessing Pipelines for Machine Learning. Workshop on Human-In-the-Loop Data Analytics in conjunction with the 2020 ACM SIGMOD/PODS Conference, (**HILDA@SIGMOD 2020**), Portland, OR, USA.

Under review

* Youmi Suk, Chenguang Pan, and **Ke Yang**. Using Generative AI for Sequential Data Generation in Monte Carlo Simulation Studies, 2024.

GRANTS, FELLOWSHIPS, AWARDS, & HONORS

– Reducing Hallucination of LLMs for Causality-integrated Personal Medical History Question Answering, Collaborative Seed Funding Grant ($35,000), School of Data Science (SDS) and the Open Cloud Institute (OCI), UTSA, 2024

– Faculty Travel Support Program, Internal funding, Office of Research, UTSA, April 2024

– Sponsored participant for NSF Secure and Trustworthy Cyberspace program (SaTC) Aspiring PI Workshop, Chicago, May 2024

– Sponsored faculty for NCFDD Faculty Success Program summer 2024, Office of Research, UTSA

– UTSA funding for research equipment ($250,000), STARs Program, the University of Texas System, 2023

– Postdoctoral Fellowship, *Center for Data Science*, University of Massachusetts Amherst, 2021

– Pearl Brownstein Doctoral Research Award, *Tandon School of Engineering*, New York University, 2021

– Invited researcher, Fairness in Machine Learning workshop at Google, 2018

TEACHING

Instructor at the University of Texas at San Antonio

- CS 5823 *Trust, Confidence, and Explainability in AI*, Spring 2025

- CS 7123 *Research Methods*, Spring 2024

- CS 5443 *Database Management Systems*, Fall 2023, 2024

Assisting Instructor at University of Massachusetts Amherst

- CMPSCI 345 *Practice and Applications of Data Management*, Fall 2022

Teaching Assistant at Drexel University

- CS 500 *Fundamentals of Databases*, Winter 2017

- CS 461 *Database Systems*, Spring 2017

STUDENTS' MENTORING

Current

- Sinmi Akindele, Ph.D. student, University of Texas at San Antonio, College of Sciences, joined in Fall 2023

- Sohanur Rahman, Ph.D. student, University of Texas at San Antonio, College of Sciences, joined in Fall 2023

- Asif Ahmed, Ph.D. student, University of Texas at San Antonio, College of Sciences, joined in fall 2023

- Kevin Mathew Maran, Master's student, University of Texas at San Antonio, College of Sciences, joined in fall 2024

- Sai Siri Chittineni, undergraduate student, University of Texas at San Antonio, Computer Science, joined in fall 2023

- Anudeep Bonagiri, high school student, Tom C Clark High School and Northwest Vista College, joined in spring 2025

Past

  – Jason Johnson, Master's student, University of Texas at San Antonio, College of Sciences, participated in spring and fall 2024

  – Samyuktha Arcot Megha Raj, Master's student, University of Texas at San Antonio, College of Sciences, participated in fall 2024

  – Ashmit Sethi, high school student, Dublin High School, participated in fall 2024

  – Rajarshi Ghosh, high school student, Oak High School and Lone Star College, participated during spring 2024

  – Zafeiria Moumoulidou, Ph.D. student, University of Massachusetts Amherst, Manning College of Information & Computer Sciences, co-advised with Prof. Alexandra Meliou in 2022 and 2023

  – Alexandra Burushkina, Master's student, University of Massachusetts Amherst, Center for Data Science, Data Science for Social Good Summer Program, graduated June 2023, current position: Ph.D. student in Computer Science at University of Massachusetts Amherst

  – Peter Tran, Master's student, University of Massachusetts Amherst, Center for Data Science, Data Science for Social Good Summer Program, graduated June 2023, current position: Ph.D. student in Psychometrics at University of Massachusetts Amherst

  – Pragath Siva, high school student, Sharon High School, graduated June 2023, current position: freshman in Computer Science and Economics at the University of Illinois Urbana-Champaign

  – Samasth Norway Ananda, Master's student, New York University, graduated June 2021, current position: software developer at Oracle

  – Biao Huang, Master's student, New York University, graduated June 2020, current position: software developer in China lead tech company

  – Jensine Raihan, undergraduate student, New York University, 2020

INVITED TALKS

  – Data-driven Solutions for AI Responsibility, Virtual Seminar, DATA Lab @ Northeastern University, 2024 Spring

  – AI and the Changing Nature of Work, Panel Speaker, South Texas Human Resources Symposium (STXHRS) 2024

- Causal Intersectionality and Fair Ranking, Integrated Symposium on Algorithmic and Testing Fairness in Education: Methods and Applications, SREE 2023 Conference Embedding Equity for Better Methods, Evidence, and Practice, September 2023

- Mitigating Bias in Data-driven Tasks, UTSA MATRIX, Fall Seminar Series, September 2023

- Responsible Data Science, Brown University, virtual, March 2023

- Reducing the Impact of Bias on Data-driven Tasks, Ohio State University, February 2023

- Data Science for Social Good, Panel Speaker, Central Massachusetts Women in Data Science (WiDS), Worcester Polytechnic Institute (WPI), March 2022

- Data Bias and their Impact on Machine Learning, MIT Horizon event, November 2022

- Fairness and Diversity in Rankings, AT&T Lab Research Weekly Symposium, June 2019

- Fairness In Ranking Systems, AT&T Lab Graduate Student Symposium, November 2018

ACADEMIC SERVICE

Conference Organization

- Session co-chair: Responsibility and Privacy at Extending Database Technology (EDBT) 2022
- Technical chair: 4th Workshop on Data Management for End-to-End Machine Learning (DEEM) at SIGMOD 2020

Program Committee Member

- Guided AI Workshop @ ACM Conference on Management of Data (SIGMOD) 2024

- Ethics reviewer, ICML 2025

- Ethics reviewer, NeurIPS 2024, 2023, 2022, 2021

- ACM Conference on Management of Data (SIGMOD) 2023

- International Conference on Extending Database Technology (EDBT) Industry Program 2023, 2022

- ACM Web Conference (a.k.a. International World Wide Web Conference, abbreviated as WWW) 2024 Industry, 2023 Industry, Workshops, Tutorials, Posters, and Demos, 2022 Industry

- IEEE Conference on Data Engineering (ICDE) Demo Track, 2023, 2022

- ACM Conference on Fairness, Accountability, and Transparency (ACM FAccT) 2021

- ACM Workshop on Responsible Recommendation (FAccTRec) at RecSys 2024, 2023, 2022, 2021

- ACM Workshop on Data Management for End-to-End Machine Learning (DEEM) at SIGMOD 2021, 2020

Ad-hoc Reviewer

- ACM Transactions on Social Computing 2023

- ACM Conference on Human Factors in Computing Systems (CHI) 2021

Other Activities

- Social Science Panelist for American Association of University Women (AAUW), International Fellowships, 2025, 2024

- Student volunteer: ACM Conference on Fairness, Accountability, and Transparency (ACM FAT*) 2019