ZIWEI ZHU

https://zziwei.github.io/
zzhu20 at gmu dot edu

George Mason University
Department of Computer Science
Fairfax, VA 22030

EDUCATION

Ph.D. Texas A&M University, USA, Computer Science   2016.08 – 2022.08
Dissertation: "Toward Responsible Recommender Systems"
Advisor: Dr. James Caverlee
Committee: Xia Hu, Alex Beutel, Xiaoning Qian, Ricardo Gutierrez Osuna

B.S. Wuhan University, China, Computer Science   2012.09 – 2016.06

RESEARCH INTERESTS

I am broadly interested in **data mining**, **machine learning**, and **information retrieval**, with a specific focus on augmenting **responsibility** in AI systems to provide fair, unbiased, accountable, and trustworthy services for both end users and society at large.

WORK EXPERIENCE

Tenure-Track Assistant Professor, George Mason University, VA   2022.08 – Now

Research Assistant, InfoLab, Texas A&M University, TX   2017.09 – 2022.08
Advisor: Dr. James Caverlee

Research Intern, Netflix, CA   2020.05 – 2020.08
Mentors: Jingu Kim, Trung Nguyen, and Aish Fenton

Research Intern, Comcast Applied AI Lab, DC   2019.05 – 2019.08
Mentor: Shahin Sefati

TEACHING EXPERIENCE

Lecturer, CSCE 484, Data Mining   2023 Spring
Department of Computer Science, George Mason University

Lecturer, CSCE 584, Data Mining   2022 Fall
Department of Computer Science, George Mason University

Teaching Assistant, CSCE 489, Special Topics in Recommender Systems   2021 Spring
Computer Science and Engineering Department, Texas A&M University

Teaching Assistant, CSCE 676, Data Mining and Analysis   2019 Fall
Computer Science and Engineering Department, Texas A&M University

Teaching Assistant, CSCE 206, Structured programming in C   2017 Fall
Computer Science and Engineering Department, Texas A&M University

PUBLICATIONS

Refereed Publications

WWW 23   Allen Lin, **Ziwei Zhu**, Jianling Wang, and James Caverlee. Enhancing User Personalization in Conversational Recommenders. The 2023 ACM Web Conference, 2023.

MobiSys 23   Liuyi Jin, Tian Liu, Amran Haroon, Radu Stoleru, Michael Middleton, **Ziwei Zhu**, Theodora Chaspari. EMSAssist: An End-to-End Mobile Voice Assistant at the Edge for Emergency Medical Services. The 21st ACM International Conference on Mobile Systems, Applications, and Services, 2023.

ECIR 23   Han Zhang, **Ziwei Zhu**, and James Caverlee. Evolution of Filter Bubbles and Polarization in News Recommendation. The 45th European Conference on Information Retrieval, 2023. (short paper)

CIKM 22   Shuo Lin, Jianling Wang, **Ziwei Zhu**, and James Caverlee. Quantifying and Mitigating Popularity Bias in Conversational Recommender Systems. The 31st ACM International Conference on Information and Knowledge Management, 2022.

WWW 22   James Kotary, Ferdinando Fioretto, Pascal Van Hentenryck, and **Ziwei Zhu**. End-to-end Learning for Fair Ranking Systems. The Web4Good special track in 33rd ACM International Conference on World Wide Web, 2022.

WSDM 22   **Ziwei Zhu** and James Caverlee. Fighting Mainstream Bias in Recommender Systems via Local Fine Tuning. The 15th ACM International Conference on Web Search and Data Mining, 2022.

KDD 21   **Ziwei Zhu**, Yun He, Xing Zhao, and James Caverlee. Popularity Bias in Dynamic Recommendation. The 27th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2021.

SIGIR 21   **Ziwei Zhu**, Jingu Kim, Trung Nguyen, Aish Fenton, and James Caverlee. Fairness among New Items in Cold Start Recommender Systems. The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval, 2021.

WSDM 21   **Ziwei Zhu**, Yun He, Xing Zhao, Yin Zhang, Jianling Wang, and James Caverlee. Popularity-Opportunity Bias in Collaborative Filtering. The 14th ACM International Conference on Web Search and Data Mining, 2021.

WWW 21   Xing Zhao, **Ziwei Zhu**, and James Caverlee. Rabbit Holes and Taste Distortion: Distribution-Aware Recommendation with Evolving Interests. The 32th International Conference on World Wide Web, 2021.

SDM 21   Jianling Wang, Kaize Ding, **Ziwei Zhu**, and James Caverlee. Session-based Recommendation with Hypergraph Attention Networks. The 2021 SIAM International Conference on Data Mining.

SIGIR 20   **Ziwei Zhu**, Shahin Sefati, Parsa Saadatpanah, and James Caverlee. Recommendation for New Users and New Items via Randomized Training and Mixture-of-Experts Transformation. The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval, 2020.

SIGIR 20   **Ziwei Zhu**, Jianling Wang, and James Caverlee. Measuring and Mitigating Item Under Recommendation Bias in Personalized Ranking Systems. The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval, 2020.

RecSys 20   **Ziwei Zhu**, Yun He, Yin Zhang, and James Caverlee. Unbiased Implicit Recommendation and Propensity Estimation via Combinational Joint Learning. The 14th ACM Conference on Recommender Systems, 2020. (short paper)

RecSys 20   Yin Zhang, **Ziwei Zhu**, Yun He, and James Caverlee. Content-Collaborative Disentanglement Representation Learning for Enhanced Recommendation. The 14th ACM Conference on Recommender Systems, 2020.

EMNLP 20   Yun He, **Ziwei Zhu**, Yin Zhang, Qin Chen, and James Caverlee. Infusing Disease Knowledge into BERT for Health Question Answering, Medical Inference and Disease Name Recognition. The 2020 Conference on Empirical Methods in Natural Language Processing.

WWW 20   Xing Zhao, **Ziwei Zhu**, Majid Alfifi, and James Caverlee. Addressing the Target Customer Distortion Problem in Recommender Systems. The 31st International Conference on World Wide Web, 2020. (short paper)

WSDM 20   Xing Zhao, **Ziwei Zhu**, Yin Zhang, and James Caverlee. Improving the Estimation of Tail Ratings in Recommender System with Multi-Latent Representations. The 13th ACM International Conference on Web Search and Data Mining, 2020.

WSDM 20   Jianling Wang, Kaize Ding, **Ziwei Zhu**, Yin Zhang, and James Caverlee. Elite Opinion Leaders in Recommendation Systems: Elicitation and Diffusion. The 13th ACM International Conference on Web Search and Data Mining, 2020

WSDM 20   Jianling Wang, **Ziwei Zhu**, and James Caverlee. User Recommendation in Content Curation Platforms. The 13th ACM International Conference on Web Search and Data Mining, 2020.

WWW 19   **Ziwei Zhu**, Jianling Wang, and James Caverlee. Improving Top-K Recommendation via Joint Collaborative Autoencoders. The 30th International Conference on World Wide Web, 2019. (short paper)

CIKM 18   **Ziwei Zhu**, Xia Hu, and James Caverlee. Fairness-Aware Tensor-Based Recommendation. The 27th ACM International Conference on Information and Knowledge Management, 2018.

ICDM 18   Yun He, Haochen Chen, **Ziwei Zhu**, and James Caverlee. Pseudo-Implicit Feedback for Alleviating Data Sparsity in Top-K Recommendation. The 2018 IEEE International Conference on Data Mining, 2018. (short paper)

BSN 17   **Ziwei Zhu**, Sebastian Ober, and Roozbeh Jafari. Modeling and Detecting Student Attention and Interest Level Using Wearable Computers. The 14th IEEE International Conference on Wearable and Implantable Body Sensor Networks, 2017.

Workshop Papers

FAccTRec 22　Allen Lin, **Ziwei Zhu**, Jianling Wang, and James Caverlee. Towards Fair Conversational Recommender Systems. The 5th FAccTRec Workshop on Responsible Recommendation at RecSys 2022.

DSAI4RRS　**Ziwei Zhu**, Yun He, Xing Zhao, and James Caverlee. Evolution of Popularity Bias: Empirical Study and Debiasing. KDD 2022 Workshop on Data Science and Artificial Intelligence for Responsible Recommendations, 2022. (Best Paper Award)

SSL 21　Yun He, **Ziwei Zhu**, Yin Zhang, Qin Chen and James Caverlee. Infusing disease knowledge into BERT for Health Question Answering, Medical Inference and Disease Name Recognition. The Workshop on Self-Supervised Learning for the Web at WWW, 2021.

FatRec 18　**Ziwei Zhu**, Jianling Wang, Yin Zhang, and James Caverlee. Fairness-Aware Recommendation of Information Curators. The 2nd FATREC Workshop on Responsible Recommendation, 2018.

PRESENTATIONS

Invited Talks

- "Fairness among New Items in Cold Start Recommender Systems"　　　　　2021.07
  Netflix Research Seminar

- "Toward Fairness-aware Recommender Systems"　　　　　2021.04
  University of North Texas

- "Item Fairness in Recommender Systems"　　　　　2020.08
  Netflix Research Seminar

Conference Oral Presentations

- "Popularity Bias in Dynamic Recommendation"　　　　　2021.08
  ACM SIGKDD Conference

- "Fairness among New Items in Cold Start Recommender Systems"　　　　　2021.07
  ACM SIGIR Conference

- "Popularity-Opportunity Bias in Collaborative Filtering"　　　　　2021.03
  ACM WSDM Conference

- "Recommendation for New Users and New Items"　　　　　2020.07
  ACM SIGIR Conference

- "Measuring and Mitigating Under-Recommendation Bias in Personalized Ranking"　　　　　2020.07
  ACM SIGIR Conference

- "Fairness-Aware Tensor-Based Recommendation"　　　　　2018.10
  ACM CIKM Conference

Conference Poster Presentations

- "Unbiased Implicit Recommendation via Combinational Joint Learning"   2020.09
  ACM RecSys Conference

- "Improving Top-K Recommendation via Joint Collaborative Autoencoders"   2019.05
  ACM Web Conference

PROFESSIONAL SERVICE

Conference Program Committees

- KDD: 2022, 2023
- SIGIR: 2022
- WSDM: 2022, 2023
- SDM: 2023
- AAAI: 2023
- FAccT: 2023

Journal Reviewer

- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Services Computing
- IEEE Intelligent Systems
- ACM Transactions on Information Systems
- ACM Transactions on Recommender Systems
- ACM Transactions on Intelligent Systems and Technology
- Information Processing and Management
- Big Data Journal
- The Electronic Library
- Knowledge-based Systems
- Machine Learning Journal
- Heliyon Journal
- Neurocomputing Journal
- Science China Information Sciences Journal
- International Journal of Human-Computer Interaction

HONORS AND AWARDS

- TAMU CSE Graduate Research Excellence Award   2022.03
- WSDM Travel Grant   2022.03
- SIGIR Travel Grant   2021.07
- WSDM Travel Grant   2021.03
- SIGIR Travel Grant   2020.07
- CIKM Travel Grant   2018.09
- First Class Scholarship at Wuhan University (top 5% students)   2015.10
- National Scholarship, Wuhan University (top 1% students)   2014.10

- Third Class Scholarship at Wuhan University (top 30% students)   2013.10