Jin Huang

University of Amsterdam - the Netherlands

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Research Interests

Trustworthy AI, advice-giving systems, large language models, reinforcement learning

Education

University of Amsterdam

Amsterdam, the Netherlands

July 2019 - Feb. 2024

Ph.D. in Computer Science Advisor: Prof. dr. Maarten de Rijke, Dr. Herke van Hoof, Dr. Harrie Oosterhuis

Thesis: Learning Recommender Systems from Biased User Interactions

Renmin University of China M.E. in Computer Science

Beijing, China

Sep. 2016 - July 2019

Advisor: Prof. dr. Ji-Rong Wen, Prof. dr. Xin Zhao

Thesis: Research on Sequential Recommendation Algorithms with Knowledge Reasoning

Renmin University of China

Beijing, China

Sep. 2012 - July 2016 B.E. in Computer Science

Advisor: Prof. dr. Xin Zhao

Thesis: A Comparison of Recommendation Methods with Learning Distributed Representations

Working Experience

University of Amsterdam

Amsterdam, the Netherlands

Postdoc - qurAI Group April 2024 - present

Work on bias and debiasing machine learning models for medical image classification.

Technische Universiteit Delft

Delft, the Netherlands

Visiting Postdoc - Sociotechnical AI Systems Lab

April 2024 - present

Develop principles and practices for the analysis, design, and governance of AI systems with a focus on identifying and mitigating bias in their sociotechnical system context.

University of Amsterdam

Amsterdam, the Netherlands

Visiting Postdoc - IRLab

Worked on bias and debiasing in recommender systems.

Seattle, United States

Applied Scientist Intern - Alexa AI-Natural Understanding

July 2022 - Nov. 2022

Oct. 2023 - March 2024

Worked on decomposing complex user queries into multiple easy-to-execute sub-queries by leveraging large language models.

Microsoft Research Asia

Beijing, China

Intern - Social Computing Group

May 2018 - Nov. 2018

Worked on designing a knowledge graph-based recommender system for a financial institution.

Teaching Experience

Student supervision at University of Amsterdam

Amsterdam, the Netherlands

- Xuelong Fu and Redouan Semlali (BSc., 2025): A Scoping Review of Current Challenges for Trustworthy AI
- o Margot Pauelsen and Calvin law (BSc., 2023): Choice of Optimizers for Recommendation Methods
- o Cas Hortensius (MSc., 2022): Comparing Collaborative Filtering Recommender Systems for Hospitality
- o Helma Koopmans (MSc., 2022): Fairness in Two-sided Markets
- Thijs Rood and Bunyamin Çetinkaya (BSc., 2021): State Encoders for RL for Recommendations
- Luke de Keijzer (MSc., 2020): Improving Company "Look-a-Likes" Finding Algorithm with the use of Graph

Teaching assistant at University of Amsterdam

Amsterdam, the Netherlands

Teaching assistant for Human-in-the-Loop Machine Learning course Nov. 2024 - Dec. 2024

Gave lectures on RLHF and worked on grading and answering students' questions.

Teaching assistant at University of Amsterdam

Amsterdam, the Netherlands

Teaching assistant for Recommender System course *June* 2023 - *July* 2023

Designed and gave lectures and supervised students to reproduce recommendation methods.

Teaching assistant at University of Amsterdam

Amsterdam, the Netherlands

Teaching assistant for Information Retrieval course

Feb. 2023 - March 2023

Worked on exercise/exam designing, grading, and answering students' questions.

Teaching assistant at University of Amsterdam

Amsterdam, the Netherlands Sep. 2021 - Oct. 2021

Teaching assistant for Reinforcement Learning course Worked on exercise/exam designing, grading, and answering students' questions.

Teaching assistant at University of Amsterdam

Online

Teaching assistant for Reinforcement Learning course

Sep. 2020 - Oct. 2020

Worked on exercise/exam designing, grading, and answering students' questions.

Awards & Recognition

- Best Paper Nominee in SIGIR, 2024
- Student Travel Award in SIGIR, 2022 & 2018
- Student Travel Award in WSDM, 2022
- Excellent postgraduate in Renmin University, 2019
- China National Scholarship, 2018
- CCF Elite Collegiate Award, 2016
- Sa Elite Scholarship, 2016
- o First prize in China University Innovation Research and Training Program (UIRT), 2016
- o First prize in China National College Student Information Security Contest, 2015

Publications

Citation metrics (as of Jan. 2025): h-index is 8, with 1001 citations.

Revisiting Language Models in Neural News Recommender Systems: A Reproducibility Study

Yuyue Zhao, Jin Huang, David Vos, Maarten de Rijke

47th European Conference on Information Retrieval (ECIR). 2025.

Going Beyond Popularity and Positivity Bias: Correcting for Multifactorial Bias in Recommender **Systems**

Jin Huang, Harrie Oosterhuis, Masoud Mansoury, Herke van Hoof, Maarten de Rijke

47th International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR). 2024: 416–426. (Best Paper Nominee)

Repetition and Exploration in Offline Reinforcement Learning-based Recommendations

Ming Li, Jin Huang, Maarten de Rijke

DRL4IR workshop at 32nd ACM International Conference on Information and Knowledge Management (DRL4IR@CIKM). 2023.

State Encoders in Reinforcement Learning for Recommendation: A Reproducibility Study

Iin Huang, Harrie Oosterhuis, Bunyamin Cetinkaya, Thijs Rood, Maarten de Rijke

45th International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR). 2022: 2738-2748.

It Is Different When Items Are Older: Debiasing Recommendations When Selection Bias and **User Preferences are Dynamic**

Jin Huang, Harrie Oosterhuis, Maarten de Rijke

15th International Conference on Web Search and Data Mining (WSDM). 2022: 381-389.

Keeping Dataset Biases out of the Simulation: A Debiased Simulator for Reinforcement Learning based Recommender Systems

Iin Huang, Harrie Oosterhuis, Maarten de Rijke, Herke van Hoof

14th ACM Conference on Recommender Systems (RecSys). 2020: 190-199.

Taxonomy-Aware Multi-Hop Reasoning Networks for Sequential Recommendation

Jin Huang, Zhaochun Ren, Wayne Xin Zhao, Gaole He, Ji-Rong Wen, Daxiang Dong

12th ACM International Conference on Web Search and Data Mining (WSDM). 2019: 573-581.

KB4Rec: A Data Set for Linking Knowledge Bases with Recommender Systems

Wayne Xin Zhao, Gaole He, Kunlin Yang, Hongjian Dou, **Jin Huang**, Siqi Ouyang, Ji-Rong Wen Data Intelligence, 2019, 1(2): 121-136.

Improving Sequential Recommendation with Knowledge-Enhanced Memory Networks

Jin Huang, Wayne Xin Zhao, Hongjian Dou, Ji-Rong Wen, Edward Y. Chang

41st International ACM SIGIR Conference on Research & Development in Information Retrieval (SIGIR). 2018: 505-514.

Learning distributed representations for recommender systems with a network embedding approach Wayne Xin Zhao, Jin Huang, Ji-Rong Wen

Asia information retrieval symposium (AIRS). Springer, Cham, 2016: 224-236.

Professional Activities

- Workshop Organizer: The 4th Workshop on Deep Reinforcement Learning for Information Retrieval at CIKM, Oct 2023; AgentIR-1st Workshop on Agent-based Information Retrieval at SIGIR, July 2024; Workshop on Communicating Research Impact at ICAI event, Nov 2024.
- **Tutorial Organizer**: Tutorials on Recent Advances in the Foundations and Applications of Unbiased Learning to Rank at SIGIR, July 2023 and at WSDM, March 2024.
- **Moderator for ICAI session**: Hosting a session about equitable AI at the ICAI day: *Enhancing human interaction with AI* at Eindhoven University of Technology, Nov 2024.
- **Discussion group chair in IRLab**: Chairing the discussion group on large language models in IRLab, University of Amsterdam, 2023.
- Reading group chair in IRLab: Chairing the reading group on reinforcement learning for information retrieval in IRLab, University of Amsterdam, 2022.
- **Internal talk chair in IRLab**: Chairing the internal research presentations in IRLab, University of Amsterdam, 2021.
- o Journal Reviewer: TOIS 2020/2022/2024, IPM 2023, TIST 2023, TKDE 2024
- Reviewer: SIGIR 2022/2024, ECML PPKD 2022, CCL 2022/2023, WSDM 2023/2024/2025, ICTIR 2024, IEEE EAIS 2024
- o Sub-reviewer: RecSys 2020, SIGIR 2020, ICTIR 2021, ECIR 2022, ICTIR 2022, TheWebConf2023

Presentations

- o Conference talks: SIGIR 2018/2022/2024, WSDM 2019/2022, Recsys 2020
- o Invited talk at ICAI: Talk on research and impact at the ICAI lab manager meeting, Nov 2024
- o Invited talk at SEA: Search Engines Amsterdam, Oct 2020/June 2022/Dec 2022/Sep 2023
- Encore talk at Sim4IR: Workshop on Simulation for Information Retrieval Evaluation Co-located with SIGIR 2021 (Virtual Event), July 15, 2021

Results

A pipeline of reinforcement learning for recommendations (RL4Rec)

Development of the pipeline of reinforcement learning for recommendations

April 2022

Designed and implemented the pipeline of a reinforcement learning-based recommendation policy that learns from interacting with simulated users and can be integrated with different state encoder components. https://github.com/BetsyHJ/RL4Rec

A debiasing framework for debiasing in the dynamic scenario (DANCER)

Development of the debiasing framework for dynamic selection bias correction

Feb. 2022

Designed and implemented the framework for debiasing in the dynamic scenario where both selection bias and user preferences are dynamic.

https://github.com/BetsyHJ/DANCER

A debiased simulator for offline learning and evaluation (SOFA)

Development of this debiased simulator

Nov. 2020

Designed and implemented the debiased simulator to simulate user feedback, enabling the learning and evaluation of reinforcement learning for recommendations.

https://github.com/BetsyHJ/SOFA

A unified and efficient recommendation library (RecBole)

Participation in the development of this recommendation library Nov. 2020 Designed and implemented the KSR model, a sequential recommendation model with knowledge-enhanced memory networks.

https://recbole.io/index.html

Skills

- o **Technologies:** LATEX, Python, Tensorflow, Pytorch, Neo4j
- o Language: English (Fluent), Dutch (A2), Mandarin (Mother tongue)