Xinru Wang

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Summary

My research intersects Human-Computer Interaction (**HCI**) and **AI**, with a focus on Explainable AI (**XAI**). I iterate on the **evaluation and design of user-centered XAI systems for AI-assisted human decision-making**, in the context of fast-evolving *AI models* and diverse *user interfaces*.

Education

Purdue University West Lafayette, IN
Ph.D. in Computer Science, GPA: 3.93/4.00 Aug 2019 – Present
Thesis: Towards Interpretable AI-Assisted Decision-Making: Human-Centered Evaluation and Design of AI Explanations
Thesis Committee: Prof. Ming Yin (Advisor), Prof. Ninghui Li, Prof. Alexandros Psomas, Prof. Tianyi Zhang
Selected Courses: Human-Centered Computing (A+) | Algorithm Design, Analysis, And Implementation (A+)

Peking University Beijing, China
B.S. in Psychology (Dual Degree), GPA: 3.51/4.00 Sept 2016 – Jun 2019
B.S. in Intelligence Science and Technology, GPA: 3.65/4.00 Sept 2015 – Jun 2019
Thesis: "Analysis of MOOC Forum Data towards AI Support"
Thesis Advisor: Prof. Xiaoming Li

Publications

"Do I Have to Read All This?" Explaining LLM Recommendations on Ultra-Small Devices
Xinru Wang, Mengjie Yu, Hannah Nguyen, Michael Iuzzolino, Tianyi Wang, Peiqi Tang, Natasha Lynova, Co Tran, Ting Zhang, Naveen Sendhilnathan, Hrvoje Benko, Haijun Xia, Tanya Jonker.
Under Review

Towards human-AI deliberation: Design and evaluation of LLM-empowered deliberative AI for AI-assisted decision-making
Shuai Ma, Qiaoyi Chen, **Xinru Wang**, Chengbo Zheng, Zhenhui Peng, Ming Yin, Xiaojuan Ma.
Under Review

Beyond Recommender: An Exploratory Study of the Effects of Different AI Roles in AI-Assisted Decision Making
Shuai Ma, Chenyi Zhang, **Xinru Wang**, Xiaojuan Ma, Ming Yin.
Under Review

Human-LLM Collaborative Annotation Through Effective Verification of LLM Labels
Xinru Wang, Hannah Kim, Sajjadur Rahman, Kushan Mitra, Zhengjie Miao.
Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI). 2024.

Human-Centered Evaluation of Explanations in AI-Assisted Decision-Making
Xinru Wang.
Companion Proceedings of the 29th International Conference on Intelligent User Interfaces (IUI Doctoral Consortium). 2024.

"Are You Really Sure?" Understanding the Effects of Human Self-Confidence Calibration in AI-Assisted Decision Making
Shuai Ma, **Xinru Wang**, Ying Lei, Chuhan Shi, Ming Yin, Xiaojuan Ma.
Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI). 2024.

The Effects of AI Biases and Explanations on Human Decision Fairness: A Case Study of Bidding in Rental Housing Markets
Xinru Wang, Chen Liang, Ming Yin.
Proceedings of the 32nd International Joint Conference on Artificial Intelligence (IJCAI). 2023.

Who Should I Trust: AI or Myself? Leveraging Human and AI Correctness Likelihood to Promote Appropriate Trust in AI-Assisted Decision-Making
Shuai Ma, Ying Lei, **Xinru Wang**, Chengbo Zheng, Chuhan Shi, Ming Yin, Xiaojuan Ma.
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI). 2023.

Watch Out For Updates: Understanding the Effects of Model Explanation Updates in AI-Assisted Decision Making
Xinru Wang, Ming Yin.
Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems (CHI). 2023.

Will You Accept the AI Recommendation? Predicting Human Behavior in AI-Assisted Decision Making
Xinru Wang, Zhuoran Lu, Ming Yin.
Proceedings of the 2022 ACM Web Conference (WWW). 2022.

Effects of Explanations in AI-Assisted Decision Making: Principles and Comparisons
Xinru Wang, Ming Yin.
ACM Transactions on Interactive Intelligent Systems (TiiS). 2022

Are Explanations Helpful? A Comparative Study of the Effects of Explanations in AI-Assisted Decision-Making
Xinru Wang, Ming Yin.
Proceedings of the 26th International Conference on Intelligent User Interfaces (IUI). 2021.

Professional Experience

Purdue University West Lafayette, IN, US
Research Assistant Aug. 2019 - Present
– *Advisor: Ming Yin, Assistant Professor*
– Conducted large-scale online user studies to evaluate the impacts of AI explanations on human decision-making processes under various human-AI collaboration scenarios.
– Developed a space of three-component (i.e. inference + utility + selection) human behavior models to analyze human reliance in AI-assisted decision making.

Meta Reality Labs Redmond, WA, US
Research Intern Sep. 2023 - Mar. 2024
– *Mentor: Anna Mengjie Yu*
– Developed innovative methods for delivering concise explanations from LLM-driven personal assistants on ultra-small devices.
– Led a user study to evaluate end-users' preferences for various LLM explanation formats.
– Collaborated closely with researchers, designers, and developers. Submitted a paper currently under review. Research insights contributed to the development of explainable AI features on Meta's future AR device.

Megagon Labs Mountain View, CA, US
Research Intern May. 2023 - Aug. 2023
– *Mentor: Hannah Kim, Zhengjie Miao*
– Developed and evaluated a human-LLM collaborative annotation framework for natural language tasks, implementing an LLM pipeline to generate annotations and explanations.
– Conducted a crowdsourced user study to assess the impact of LLM assistance on the human annotation process.
– Collaborated with cross-functional teams and published a paper at CHI 2024. The findings directly contributed to the development of MEGAnno+, the company's newly released data annotation tool.

University of Michigan Ann Arbor, MI, US

Summer Research Intern Jul. 2018 - Sep. 2018
– *Advisor: Lionel Robert, Professor*
– Investigated bi-directional trust in semi-autonomous vehicles through user testing and trust modeling.

Kendall Square Capital Beijing, China
Machine Learning Intern Jan. 2019 - Apr. 2019
– Extracted time-series features from the limit order book data for prediction of mid-price movement in high frequency trading.

DiDi Beijing, China
Machine Learning Intern Sep. 2018 - Jan. 2019
– Implemented machine learning models to predict drivers' order-taken behavior and waiting-time on a million-scale database.

Selected Talks

Human-LLM Collaborative Annotation Through Effective Verification of LLM Labels
Presented at CHI 2024 May. 2024

Human-Centered Evaluation of Explanations in AI-Assisted Decision-Making
Presented at IUI 2024 Doctoral Consortium Apr. 2024

The Effects of AI Biases and Explanations on Human Decision Fairness: A Case Study of Bidding in Rental Housing Markets
Presented at IJCAI 2023 Aug. 2023

Watch Out For Updates: Understanding the Effects of Model Explanation Updates in AI-Assisted Decision Making
Presented at CHI 2023 May. 2023

Will You Accept the AI Recommendation? Predicting Human Behavior in AI-Assisted Decision Making
Presented at WWW 2022 Apr. 2022

Understanding Human Behavior in AI-Assisted Decision Making: Experiments and Models
Presented at MIDAS Future Leaders Summit 2022 Apr. 2022

Are Explanations Helpful? A Comparative Study of the Effects of Explanations in AI-Assisted Decision-Making
Presented at IUI 2021 Apr. 2021

Service

Program Committee

ACM Conference on Intelligent User Interfaces (IUI): 2025
ACM CHI Workshop on Human-Centered Explainable AI (HCXAI): 2024, 2023, 2022
ACM Conference on Fairness, Accountability, and Transparency (FAccT): 2023

Assistant to Subcommittee Chair
ACM Conference on Human Factors in Computing Systems (CHI): 2025

Conference Reviewer
ACM Conference on Human Factors in Computing Systems (CHI): 2025, 2024, 2023
ACM Conference on Human Factors in Computing Systems (CHI) Late-Breaking Work: 2024, 2023
ACM Conference on Designing Interactive Systems (DIS): 2024
ACM/IEEE International Conference on Human-Robot Interaction (HRI) alt.HRI: 2024

Journal Reviewer
IEEE Transactions on Human-Machine Systems (THMS)
ACM Transactions on Interactive Intelligent Systems (TiiS)

Student Volunteer
ACM Conference on Intelligent User Interfaces (IUI): 2024
ACM Conference on Research and Development in Information Retrieval (SIGIR): 2018

Teaching

CS471 Introduction to Artificial Intelligence, Purdue University
Head Graduate Teaching Assistant for Prof. Raymond A. Yeh — Spring 2023
Head Graduate Teaching Assistant for Prof. Ming Yin — Summer 2022, Fall 2022
Graduate Teaching Assistant for Prof. Jennifer Neville — Fall 2019

CS242 Introduction To Data Science, Purdue University
Graduate Teaching Assistant for Prof. Tony Bergstrom — Spring 2020

CS38001 Python Programming, Purdue University
Graduate Teaching Assistant for Prof. Ruby Tahboub — Fall 2019, Spring 2020

Mentoring

Songyu He (HKUST undergraduate student) — Fall 2024 - Present

Honors and Awards

NSF Student Travel Award (IUI 2024) — 2024
Apple PhD Fellowship Nominee (Purdue University) — 2024
Graduate Teaching Award (Purdue University) — 2023
Summit Attendee and Speaker (MIDAS Future Leaders Summit) — 2022
Women in Science Program Travel Grant (Purdue University) — 2022

Microsoft Research PhD Fellowship Nominee (Purdue University)	2022
Academic Excellence Award (Peking University, top 10%)	2018
Fei-Xun Scholarship (Peking University)	2018
Academic Excellence Award (Peking University, top 15%)	2016
May 4th Scholarship (Peking University)	2016

Skills

Programming: Python, R, HTML/CSS/JavaScript, SQL, MATLAB, C/C++, Java
Tools & Frameworks: Python Flask, Meteor, Pytorch, Sklearn
User Study: Online (AMTurk, Prolific) and in-lab
Data Analysis: Quantitative (e.g. ANOVA, regressions, SEM) and qualitative (e.g. thematic analysis)
Languages: English (GRE 162+170+3.5, TOEFL 111), Mandarin (Native)