Xinru Wang

CS PhD candidate in Purdue University

West Lafayette, IN 47907

(+1) 765-409-0693 | ✉ xinruw@purdue.edu | 🏠 xinruw.github.io | 🔗 Xinru Wang | 🎓 Xinru Wang

Summary

My research intersects Human-Computer Interaction (**HCI**) and **AI**, with a focus on Explainable AI (**XAI**). By defining **human-centered metrics** and conducting **large-scale user studies** on the effectiveness of XAI methods, I aim to **understand human users' needs and expectations for XAI** in supporting AI-assisted decision-making, in the context of fast-evolving *AI models* and diverse interaction *interfaces*. My research aims to motivate human-centered design for XAI systems.

Education

Purdue University *West Lafayette, IN, US*

Ph.D. in Computer Science, GPA: 3.93/4.00 *Aug. 2019 - May. 2025 (Expected)*

- Thesis: "Towards Interpretable AI-Assisted Decision-Making: A Human-Centered Evaluation of AI Explanations"
- 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 *Sep. 2016 - Jun. 2019*

Peking University *Beijing, China*

B.S. in Intelligence Science and Technology, GPA: 3.65/4.00 *Sep. 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
RESEARCH ASSISTANT

West Lafayette, IN, US

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
RESEARCH INTERN

Redmond, WA, US

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
RESEARCH INTERN

Mountain View, CA, US

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
SUMMER RESEARCH INTERN

Ann Arbor, MI, US

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
MACHINE LEARNING INTERN

Beijing, China

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
MACHINE LEARNING INTERN

Beijing, China

Sep. 2018 - Jan. 2019

- Implemented machine learning models to predict drivers' order-taken behavior and waiting-time on a million-scale database.

Talks

Human-LLM Collaborative Annotation Through Effective Verification of LLM Labels *May. 2024*
ACM Conference on Human Factors in Computing Systems (CHI)

Human-Centered Evaluation of Explanations in AI-Assisted Decision-Making *Apr. 2024*
ACM Conference on Intelligent User Interfaces (IUI)

The Effects of AI Biases and Explanations on Human Decision Fairness: A Case Study of Bidding in Rental Housing Markets *Aug. 2023*
International Joint Conference on Artificial Intelligence (IJCAI)

Watch Out For Updates: Understanding the Effects of Model Explanation Updates in AI-Assisted Decision Making *May. 2023*
Conference on Human Factors in Computing Systems (CHI)

Will You Accept the AI Recommendation? Predicting Human Behavior in AI-Assisted Decision Making *Apr. 2022*
ACM Web Conference (WWW)

Understanding Human Behavior in AI-Assisted Decision Making: Experiments and Models

Apr. 2022

MIDAS Future Leaders Summit 2022

Are Explanations Helpful? A Comparative Study of the Effects of Explanations in AI-Assisted Decision-Making

Apr. 2021

ACM Conference on Intelligent User Interfaces (IUI)

Service

Program Committee

- 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): 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*

Honors & Awards

2024	**NSF Student Travel Award**, ACM Conference on Intelligent User Interfaces	*Greenville, SC, US*
2024	**Apple PhD Fellowship Nominee**, Purdue University	*West Lafayette, IN, US*
2023	**Graduate Teaching Award**, Purdue University	*West Lafayette, IN, US*
2022	**Summit Attendee and Speaker**, MIDAS Future Leaders Summit	*Ann Arbor, MI, US*
2022	**Women in Science Program Travel Grant**, Purdue University	*West Lafayette, IN, US*
2022	**Microsoft Research PhD Fellowship Nominee**, Purdue University	*West Lafayette, IN, US*
2018	**Academic Excellence Award (top 10%)**, Peking University	*Beijing, China*
2018	**Fei-Xun Scholarship**, Peking University	*Beijing, China*
2016	**Academic Excellence Award (top 15%)**, Peking University	*Beijing, China*
2016	**May 4th Scholarship**, Peking University	*Beijing, China*

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)