Xinru Wang

CS PhD student in Purdue University

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Research Interest

My research lies at the intersection of human-computer interaction (**HCI**) and explainable AI (**XAI**). I utilize both experimental and computational approaches to explore **user-centered evaluation** of AI explanations in **AI-assisted decision making**, and finally seek to better design XAI systems that human users can interact with effectively.

Education

Purdue University — *West Lafayette, IN, US*

PH.D. IN COMPUTER SCIENCE, GPA: 3.93/4.00 — *Aug. 2019 - Present*

- Advisor: Ming Yin

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: Xiaoming Li

Professional Experience

Meta Reality Labs — *Redmond, WA, US*

RESEARCH INTERN — *Sep. 2023 - Present*

- *Mentor: Anna Mengjie Yu*
- Work on human interaction with explainable AI assistance on AR devices.

Megagon Labs — *Mountain View, CA, US*

RESEARCH INTERN — *May. 2023 - Aug. 2023*

- *Mentor: Hannah Kim, Zhengjie Miao*
- Explored a Human-LLM collaborative annotation framework aimed at reducing cost and increasing efficiency. Submitted a paper to CHI 2024.

Purdue University — *West Lafayette, IN, US*

RESEARCH ASSISTANT — *Aug. 2019 - Present*

- *Advisor: Ming Yin, Assistant Professor*
- Conducted large-scale online human-subject experiments to evaluate how AI explanation impacts human decision-making processes.
- Proposed a space of three-component (i.e. inference + utility + selection) human behavior models in AI-assisted decision making.

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, data extraction, 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.

Publications

Human-LLM Collaborative Annotation

Xinru Wang, Hannah Kim, Sajjadur Rahman, Kushan Mitra, Zhengjie Miao. *In submission*

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. *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. *CHI 2023*

Watch Out For Updates: Understanding the Effects of Model Explanation Updates in AI-Assisted Decision Making
Xinru Wang, Ming Yin. *CHI 2023*

Will You Accept the AI Recommendation? Predicting Human Behavior in AI-Assisted Decision Making
Xinru Wang, Zhuoran Lu, Ming Yin. *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. *IUI 2021*

Patent

Recommendation Method for Recipes Based on Deep Learning
Xinru Wang, Yichun Wang, Zhilou Yu. *CN107665254A, Patent filed in Feb. 2018 (In Chinese)*

Teaching

CS471 Introduction to Artificial Intelligence, Purdue University
Head Teaching Assistant — *Fall 2022, Spring 2023*
Teaching Assistant — *Fall 2019*

CS242 Introduction to Data Science, Purdue University
Teaching Assistant — *Spring 2020*

CS38001 Python Programming, Purdue University
Teaching Assistant — *Fall 2019, Spring 2020*

Talk

Understanding Human Behavior in AI-Assisted Decision Making: Experiments and Models — *Apr. 2022*
MIDAS Future Leaders Summit 2022, University of Michigan

Professional Service

Program Committee
- CHI HCXAI workshop 2022 & 2023, FAccT 2023

Reviewer
- TiiS, CHI 2023, CHI 2023 Late-Breaking Work, CHI 2024

Student Volunteer
- SIGIR 2018

Honors & Awards

2023	**Graduate Teaching Award**, Purdue University Department of Computer Science	*West Lafayette, IN, US*
2018	**Academic Excellence Award**, Peking University (top 10%)	*Beijing, China*
2018	**Fei-Xun Scholarship**, Peking University	*Beijing, China*
2016	**Academic Excellence Award**, Peking University (top 15%)	*Beijing, China*
2016	**May 4th Scholarship**, Peking University	*Beijing, China*

Skills

Programming	Python, R, HTML/CSS/JavaScript, SQL, MATLAB, C/C++, Java
Frameworks	Pandas, Numpy, sklearn, PyTorch, Meteor
Languages	Chinese, English (GRE 162+170+3.5, TOEFL 111)