

Ziang Xiao

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EMPLOYMENT

Johns Hopkins University

Assistant Professor, Computer Science

Jan 2024

Microsoft Research, Montréal

Postdoctoral Researcher, Fairness, Accountability, Transparency & Ethics in AI

Sept 2022 - Jan 2024

Johns Hopkins University

Assistant Research Professor, Computer Science

July 2022 - Jan 2024

EDUCATION

University of Illinois Urbana-Champaign

2023

Ph.D. in Computer Science

Dissertation: *Seeing Us through Machines: Designing and Building Conversational AI to Understand Humans*

Committee: Hari Sundaram (Advisor), Karrie Karahalios (Advisor), Michelle X. Zhou, Heng Ji, and Brent W. Roberts

University of Illinois Urbana-Champaign

2016

B.S. with Highest Distinction in Psychology and High Distinction in Statistics & Computer Science

Dissertation Advisor: Dov Cohen

PUBLICATIONS

*: Equal authorship; †: Student mentee;

Papers:

1. Pitis, S., **Xiao, Z.**, Le Roux, N., and Sordoni, A. (2024). Improving Context-Aware Preference Modeling for Language Models. *Thirty-eight Conference on Neural Information Processing Systems (NeurIPS)*.
2. Liu, Y.[†], Blodgett, S. Cheung, J., Liao Q. V. , Olteanu A., and **Xiao, Z.** (2024). ECBD: Evidence-Centered Benchmark Design for NLP. *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL)*
3. Wang, R., Todd, G., **Xiao, Z.**, Yuan, X., Côté, M. A., Clark, P., Jansen, P. (2024). Can Language Models Serve as Text-Based World Simulators?. *Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (ACL)*
4. Sharma, N.[†], Liao, Q. V., and **Xiao, Z.** (2024). Generative Echo Chamber? Effects of LLM-Powered Search Systems on Diverse Information Seeking. *In Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems (CHI)* [Best Paper Award]
5. Sordoni, A., Yuan, X., Côté, M. A., Pereira, M., Trischler, A., **Xiao, Z.**, Hosseini, A., Niedtner, F, and Le Roux, N. (2023). Joint Prompt Training of Stacked LLMs using Variational Inference. *In*

6. **Xiao, Z.** *, Zhang, S. *, Lai, V., and Liao, Q. V. (2023). Evaluating Evaluation Metrics: A Framework for Analyzing NLG Evaluation Metrics using Measurement Theory. *In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP)* pp. 10967-10982.
7. Wang, R., Todd, G., Yuan, E., **Xiao, Z.**, Côté, M. A., and Jansen, P. (2023). ByteSized32: A Corpus and Challenge Task for Generating Task-Specific World Models Expressed as Text Games. *In Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (EMNLP)* pp. 13455-13471.
8. **Xiao, Z.** (2023). Seeing us through machines: designing and building conversational AI to understand humans (Doctoral dissertation, University of Illinois at Urbana-Champaign).
9. **Xiao, Z.**, Li, T. W., Karahalios, K., and Sundaram, H. (2023). Inform the Uninformed: Improving Online Informed Consent Reading with an AI-Powered Chatbot. *In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1-17).
10. **Xiao, Z.**, Liao, Q. V., Zhou, M., Grandison, T., and Li, Y. (2023). Powering an AI Chatbot with Expert Sourcing to Support Credible Health Information Access. *In Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI)* (pp. 2-18)
11. Ge, Y. *, **Xiao, Z.** *, Diesner, J., Ji, H., Karahalios, K., and Sundaram, H. (2022). What should I ask: A knowledge-driven approach for follow-up question generation in conversational surveys. *In Proceedings of the 37th Pacific Asia Conference on Language, Information and Computation (PACLIC 37)*
12. **Xiao, Z.**, Mennicken, S., Huber, B., Shonkoff, A., and Thom, J. (2021). Let Me Ask You This: How Can a Voice Assistant Elicit Explicit User Feedback?. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW2), 1-24.
13. Vaccaro, K., **Xiao, Z.**, Hamilton, K., and Karahalios, K. (2021). Contestability for content moderation. *Proceedings of the ACM on human-computer interaction*, 5(CSCW2), 1-28.
14. Goldstein, M. H., Froiland, J. M., **Xiao, Z.**, Woodard, B. S., Li, T., and Philpott, M. L. (2021). Application of online visual-spatial training to increase visual-spatial ability and growth mindset of engineering students. *Int. J. Eng. Educ*, 37, 1674-1682.
15. Wauck, H., Woodard, B. S., **Xiao, Z.**, Li, T. W., and Bailey, B. P. (2020). A Data-Driven, Player-Centric Approach to Evaluating Spatial Skill Training Games. *In Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI Play)* (pp. 349-361). [Honorable Mention]
16. **Xiao, Z.**, Zhou, M. X., Liao, Q. V., Mark, G., Chi, C., Chen, W., and Yang, H. (2020). Tell me about yourself: Using an AI-powered chatbot to conduct conversational surveys with open-ended questions. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 27(3), 1-37.
17. **Xiao, Z.**, Zhou, M. X., Chen, W., Yang, H., and Chi, C. (2020). If I hear you correctly: Building and evaluating interview chatbots with active listening skills. *In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1-14).
18. **Xiao, Z.**, Ho, P. S., Wang, X., Karahalios, K., and Sundaram, H. (2019). Should we use an abstract comic form to persuade? Experiments with online charitable donation. *Proceedings of the ACM on Human-Computer Interaction*, 3(CSCW), 1-28.
19. **Xiao, Z.**, Zhou, M. X., and Fu, W. T. (2019). Who should be my teammates: Using a conversational agent to understand individuals and help teaming. *In Proceedings of the 24th International Conference on Intelligent User Interfaces (IUI)* (pp. 437-447).
20. Gao, M. *, **Xiao, Z.** *, Karahalios, K., and Fu, W. T. (2018). To Label or not to Label: The Effect of Stance and Credibility Labels on Readers' Selection and Perception of News Articles. *Proceedings of the ACM on Human-Computer Interaction*, 2(CSCW), 1-16.
21. Chiu, P. T., Wauck, H., **Xiao, Z.**, Yao, Y., and Fu, W. T. (2018). Supporting spatial skill learning with gesture-based embodied design. *In 23rd International Conference on Intelligent User Interfaces (IUI)* (pp. 67-71).

22. **Xiao, Z.**, Wauck, H., Peng, Z., Ren, H., Zhang, L., Zuo, S., Yao, Y., and Fu, W. T. (2018, March). Cubicle: An adaptive educational gaming platform for training spatial visualization skills. *In 23rd International Conference on Intelligent User Interfaces (IUI)* (pp. 91-101).
23. Wauck, H., **Xiao, Z.**, Chiu, P. T., and Fu, W. T. (2017). Untangling the relationship between spatial skills, game features, and gender in a video game. *In Proceedings of the 22nd International Conference on Intelligent User Interfaces (IUI)* (pp. 125-136).
24. **Xiao, Z.**, Yao, Y., Yen, C. H., Dey, S., Wauck, H., Leake, J. M., Woodard, B., Wolters, A., and Fu, W. T. (2017). A Scalable Online Platform for Evaluating and Training Visuospatial Skills of Engineering Students. *In 2017 ASEE Annual Conference & Exposition*.
25. **Xiao, Z.** (2016). Does Grammatically Gendered Language Have an Impact on Investors' behaviors? Companies with Grammatically Masculine Names Show More Stock Momentum Than Those with Grammatically Feminine Names. *Bachelors dissertation, University of Illinois Urbana-Champaign*.

Book Chapter:

1. Torkamaan, H., Tahaei, M., Buijsman, S., **Xiao, Z.**, Wilkinson, D., & Knijnenburg, B. P. (2024). The Role of Human-Centered AI in User Modeling, Adaptation, and Personalization—Models, Frameworks, and Paradigms. *In A Human-Centered Perspective of Intelligent Personalized Environments and Systems* (pp. 43-83). Cham: Springer Nature Switzerland

Workshop, Posters and Demos:

1. Huiqi Zou[†] Yijiang Li, and **Xiao, Z.** (2024). Towards Dynamic and Realistic Evaluation of Multi-modal Large Language Model *GenBench workshop: The second workshop on generalisation (benchmarking) in NLP at 2024 Empirical Methods in Natural Language Processing (GenBench@EMNLP2024)*
2. Liao, Q. V., and **Xiao, Z.** (2023). Rethinking Model Evaluation as Narrowing the Socio-Technical Gap. *AI & HCI Workshop at the 40th International Conference on Machine Learning (ICML)* [Honorable Mention]
3. Pitis, S., **Xiao, Z.**, and Sordoni, A. (2023). Canonical Design for Language Agents using Natural Language Reward Models. *1st Workshop on AI meets Moral Philosophy and Moral Psychology at Thirty-seventh Conference on Neural Information Processing Systems (MP2@NeurIPS)*.
4. **Xiao, Z.**, Yuan, X., Liao, Q. V., Abdelghani, R., and Oudeyer, P. Y. (2023). Supporting Qualitative Analysis with Large Language Models: Combining Codebook with GPT-3 for Deductive Coding. *In Companion Proceedings of the 28th International Conference on Intelligent User Interfaces (IUI)* (pp. 75-78).
5. Li, T. W., **Xiao, Z.**, Goldstein, M. H., Philpott, M. L., and Woodard, B. (2021). Evaluating an Intelligent Sketching Feedback Tool for Scalable Spatial Visualization Skill Training. *In 2021 ASEE Virtual Annual Conference Content Access*.
6. Woodard, B. S., Li, T. W., **Xiao, Z.**, Goldstein, M. H., and Philpott, M. L. (2021). Work in Progress: Spatial Visualization Assessment and Training in the Grainger College of Engineering at the University of Illinois. *In 2021 ASEE Illinois-Indiana Regional Conference*.
7. Zhou, M. X., Chen, W., **Xiao, Z.**, Yang, H., Chi, T., and Williams, R. (2019). Getting virtually personal: chatbots who actively listen to you and infer your personality. *In Proceedings of the 24th International Conference on Intelligent User Interfaces: Companion (IUI)* (pp. 123-124).
8. Xiao, Z., Zuo, S., Zhao, J., Fu, W. T., Goldstein, M. H., Philpott, M. L., M., Laystorm-Woodard, J., Pool, M., Wolters, A., and Woodard, B. S. (2019). Understanding interrelated growth mind-set and academic participation & performance. *In 2019 ASEE Annual Conference & Exposition*.
9. **Xiao, Z.**, Yao, Y., and Fu, W. T. (2018). An Intelligent Educational Platform for Training Spatial Visualization Skills. *In Proceedings of the 23rd International Conference on Intelligent User Interfaces Companion (IUI)* (pp. 1-2).

10. **Xiao, Z.**, and Bub, K. 2016. Longitudinal Associations between Self-Regulation and Mental Health across Early Childhood to Adolescence. *16th Biennial Meeting of Society for Research on Adolescence (SRA 16)*

INVITED TALKS

1. **Xiao, Z.** (2024) AI4SocialScience: Designing AI to Understand Humans. *School of Labor & Employment Relations, University of Illinois Urbana-Champaign*
2. **Xiao, Z.** (2024) Towards Human-Centered Evaluation of Generative Models. *Interactive Computing Seminar, University of Illinois Urbana-Champaign*
3. **Xiao, Z.** (2024) AI4SocialScience: Designing AI to Understand Humans. *Clinical Research Grand Rounds at the Welch Center for Prevention, Epidemiology, and Clinical Research*
4. **Xiao, Z.** (2024) Seeing Us through Machines: Designing and Building AI to Understand Humans. *NIA Expert Meeting on Alternative Approaches for Capturing American Diversity: Recruitment, Retention, and Representation*
5. **Xiao, Z.** (2023) Seeing Us through Machines: Designing and Building AI to Understand Humans. *McGill AI Learnathon*
6. **Xiao, Z.** (2021) Petri: An open-source infrastructure for longitudinal behavioral research in the field. *Center for Social and Behavioral Science: Human Subjects Research Workshop. University of Illinois Urbana-Champaign.*
7. **Xiao, Z.** (2019) Building Real-World Chatbot Interviewers: Lessons from a Wizard-of-Oz Field Study. *Workshop on User-Aware Conversational Agents, Los Angeles, CA, USA*
8. **Xiao, Z.** (2017) A Scalable Online Platform for Evaluating and Training Visuospatial Skills of Engineering Students. *Educational Psychology Brown Bag. University of Illinois Urbana-Champaign.*

AWARDED GRANTS

Amazon AI2AI Research Awards

Interactive and Contextualized Evaluation for Large Language Models (PI; 2024 - 2025)

Johns Hopkins Discovery Awards

Virtual Neurology Clinic: A Human-AI Interface for Remote Autonomous Augmented/Virtual Reality Neurologic Screening and Triaging (Co-PI; 2024 - 2025)

2024 SNF Agora Faculty Grant

AI-Curated Democratic Discourse (Co-PI; 2024 - 2025)

2024 SNF Agora Faculty Grant

Understanding and Mitigating Generative Echo Chamber in Conversational Search (PI; 2024 - 2025; \$5,000)

SERVICE

Organizing Committee:

- IUI 2023 [Publicity Chair]
- Humen-centric Generative AI @TiiS [Guest Editor]
- Human-Centered Evaluation and Auditing of Language Models @CHI 2024 [Co-Organizer]
- 3rd NLP+HCI Workshop @NACCL 2024 [Co-Organizer]

- Human-Centered Evaluation of Language Technologies @ EMNLP 2024 [Co-Instructor]

Associate Chair:

- CHI 2024 Understanding People
- CHI 2021 Late Breaking Works
- CSCW 2021 Poster
- CSCW 2022
- IUI 2023
- WWW 2023
- FAccT 2023-24

Reviewer:

- CHI 2020-24 [Outstanding Reviews 22-24]
- UIST 2022-24 [Outstanding Reviews 2022]
- CSCW 2019-23
- IUI 2017-23
- CHI PLAY 2018-21
- ECSCW 2021
- ACM Transactions on Interactive Intelligent Systems (TiiS)
- International Journal of Human-Computer Interaction (IJHCI)
- Cognitive Systems

Student Volunteer:

- CHI 2017
- CSCW 2020

AWARDS & HONORS

- Microsoft Global Hackathon Award Winner - Responsible AI (2023)
- Teacher Ranked as Excellent (2022)
- Graduate College Conference Participation Awards (2021)
- Harry Triandis Award (2016)
- James E. Spoor Scholarship (2016)