ZIANG XIAO

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EDUCATION

University of Illinois at Urbana-Champaign 2016-2022 [expected]

Ph.D Candidate in Computer Science

Co-Advised by Hari Sundaram and Karrie Karahalios

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

University of Illinois at Urbana-Champaign 2012-2016

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

Advised by Dov Cohen

RESEARCH SUMMARY

My research is motivated by the fundamental question of understanding humans at scale, e.g., how could we conduct robust, generalizable, and engaging studies about human behavior? I study and develop novel systems that can collaborate with scholars and decision-makers to expand our knowledge about ourselves. In my doctoral work, I have been examining this topic in behavioral science research by integrating AI into survey methods. As many decision-makers rely on surveys to understand their stakeholders and make real-world decisions, even a tiny improvement in survey quality could tremendously improve our lives. I design and build conversational agents to conduct engaging surveys while collecting high-quality information.

RESEARCH EXPERIENCE

Research Assistant, Crowd Dynamics Lab

Computer Science Department, University of Illinois June 2016-Present

Advisor: Hari Sundaram

- Investigated the persuasiveness of algorithmically synthesized comic-style messages in behavior adoption.
- Built and studied how conversational agents could transform survey research.
- Developing and evaluating a web/mobile research platform for conducting large-scale field study with conversational agents.
- Building knowledge-driven natural language generation models to generate follow-up questions for interview chatbots.

Research Intern

Spotify, Boston MA. Summer 2020

Advisor: Sarah Mennicken & Jenn Thom

- Conducted need-finding study by interviewing experts in recommender systems.
- Designed various voice interactions for collecting user feedback in situ.
- Designed and conducted online studies to evaluate different voice interactions for feedback elicitation.

Research Intern

Juji. Inc, Saratoga CA. Summer 2018, 2019

Advisor: Michelle X. Zhou & Huahai Yang

- Extracted sematic evidence from over 2000 real-world conversations to improve the personality inference engine.
- Built a conversation-based recommendation system for book readers.
- Built text analytic tool with symbolic and deep learning algorithms to summarize short-text conversation.
- Analyzed multiple conversation datasets to discover the relationship between human individuality and behavior.

Research Assistant, Cascade Lab

Computer Science Department, University of Illinois Aug 2015-May 2019

Advisor: Wai-Tat Fu

- Developed and evaluated a scalable online platform used by over 6000 students for training spatial visualization skills
- Studied how conversational agents can help student teaming in the real-world educational setting
- Designed and developed an educational game “Cubicle" for spatial visualization skill training

PUBLICATIONS * Indicates authors contribute equally to the work.

j7. **Xiao, Z**., Grandison, T., Liao, V., Zhou, M., and Li, Y. *[On Building AI-Powered Chatbots to Support Information Seeking during Crises].* [Revise and Resubmission]

c9. **Xiao*, Z.,** Ge*, Y., Ji, H., Diesner, J., Sundaram, H., and Karahalios, K. *[On A Knowledge-graph Based Approach for Follow-up Questions Generation in Conversational Survey].*[In submission]

j6. **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?.* Proc. ACM Human-Computer Interaction, 2, CSCW, Article 55 (CSCW '21).

j5. Vaccaro, K., **Xiao, Z.**, Hamilton, K, and Karahalios, K. 2021.*Contestbaility for Content Moderation.* Proc. ACM Human-Computer Interaction, 2, CSCW, Article 318 (CSCW '21).

j4. Goldstein, M., Froiland J., **Xiao, Z.,** Woodard, B., Tao L., and Philpott M. 2021. Application of Online Visual-Spatial Training to Increase Visual-Spatial Ability and Growth Mindset of Engineering Students. International Journal of Engineering Education (IJEE)

c8. Li, T. **Xiao, Z.**, Goldstein, M., Philpott, and Woodard, B. 2021. *Evaluating an Intelligent Sketching Feedback Tool for Scalable Spatial Visualization Skill Training.* Proc. 128th ASEE Annual Conference and Exposition (ASEE '21).

c7. Wauck, H. Woodard, B. **Xiao, Z.**, Li, T. and Bailey, B. ,2020, *A Data-Driven, Player-Centric Approach to Evaluating Spatial Skill Training Games.* Proc. 2020 Annual Symposium on Computer-Human Interaction in Play (CHI Play '20) ***[Honorable Mention]***

c6. **Xiao, Z.**, Zhou, M., Chen, W., Yang., H., and Chi, C., 2020, *If I Hear You Correctly: Building and Evaluating Interview Chatbots with Active Listening Skills.* Proc. 2020 CHI Conference on Human Factors in Computing Systems. (CHI '20)

j3. **Xiao, Z.**, Zhou, M., Liao, 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.

j2. **Xiao, Z.**, Wang, X., Ho, P., Karahalios, K. and Sundaram, H. 2019. *Should We Use an Abstract Comic Form to Persuade? Experiments with Online Charitable Donation.* Proc. ACM Human-Computer Interaction, 3, CSCW, Article 75 (CSCW '19).

c5. **Xiao, Z.**, Zhou, M., and Fu, W. 2019. *Who Should Be My Teammates: Using A Conversational Agent to Understand Individual Difference and Help Teaming.* Proc. the 24th International Conference on Intelligent User Interfaces (IUI '19).

j1. Gao, M.*, **Xiao, Z.***, Karahalios, K. and Fu, W. 2018. *To Label or Not to Label: The Effect of Stance and Credibility Labels on Readers' Selection and Perception of News Articles.* Proc. ACM Human-Computer Interaction, 2, CSCW, Article 55 (CSCW '18).

c4. **Xiao, Z.**, Wauck, H., Peng, Z., Ren, H., Zhang, L., Zuo, S., Yao, Y., and Fu, W. 2018.*Cubicle: An Adaptive Educational Gaming Platform for Training Spatial Visualization Skills.* Proc. 23rd International Conference on Intelligent User Interfaces (IUI '18).

c3. Chiu, P., Wauck, H., **Xiao, Z**, Yao, Y., and Fu, W. 2018. *Supporting Spatial Skills Learning with Gesture-based Embodied Design* Proc. 23rd International Conference on Intelligent User Interfaces (IUI '18).

c2. **Xiao, Z.**, Yao, Y., Yen, C, Dey, S., Wauck, H., Leake, J., Woodard, B., Wolters, A., and Fu, W. 2017. *A Scalable Online Platform for Evaluating and Training Visuospatial Skills of Engineering Students.* Proc. 124th ASEE Annual Conference and Exposition (ASEE '17)

c1. Wauck, H., **Xiao, Z.**, Chiu, P., and Fu, W. 2017. Untangling the Relationship Between Spatial Skills, Game Features, and Gender in a Video Game. Proc. 22nd International Conference on Intelligent User Interfaces (IUI '17). ACM, New York, NY, USA, 125-136

POSTER & DEMOS

d1. Zhou, M. 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.* Proc. 24th International Conference on Intelligent User Interfaces Companion (IUI '19 Companion).

p3. **Xiao, Z.**, Zuo, S., Zhao, J., Fu, W., Goldstein, M., Philpott, M., Laystorm-Woodard, J., Pool, M., Wolters, A., and Woodard, B. 2019. *Towards Understanding Interrelated Growth Mindset and Academic Participation & Performance.* Proc.126th ASEE Annual Conference and Exposition (ASEE '19). Tampa, Florida.

p2. **Xiao, Z.**, Yao, Y., and Fu, W. 2018. *An Intelligent Educational Platform for Training Spatial Visualization Skills.* Proc. 23rd International Conference on Intelligent User Interfaces Companion (IUI '18 Companion).

p1. **Xiao, Z.**, and Bub, K. 2016. Longitudinal Associations between Self-Regulation and Mental Health across Early Childhood to Adolescence" at 16th Biennial Meeting of Society for Research on Adolescence Baltimore, Md. (SRA '16)

INVITED TALKS

t3. **Xiao, Z.** *Petri: An open-source infrastructure for longitudinal behavioral research in the field.* At Center for Social and Behavioral Science: Human Subjects Research Workshop. University of Illinois at Urbana-Champaign. 2021

t2. **Xiao, Z.**, *Building Real-World Chatbot Interviewers: Lessons from a Wizard-of-Oz Field Study.* Workshop on User-Aware Conversational Agents, Los Angeles, CA, USA

t1. **Xiao, Z.**, *A Scalable Online Platform for Evaluating and Training Visuospatial Skills of Engineering Students.* Educational Psychology Brown Bag. University of Illinois at Urbana-Champaign. 2017

TEACHING EXPERIENCES

CS465 User Interface Design	FA16, SP17, SP18, SP19, FA20
CS225 Data Structure and Algorithms	FA19
CS416 Data Visualization	SU21
ENG 177 Spatial Visualization	FA21

GRANT EXPERIENCES *Assisted in the grant preparation*

g3. *Developing Intervention Methods that Improve Visuospatial Skills of Engineering Students.* The University of Illinois College of Engineering Strategic Instructional Innovations Program (SIIP). 2019-2021

g2. *Behavioral Decision Research—To Go*. The Social and Behavioral Sciences Research Initiative (SBSRI). 2018

g1. *Developing Intelligent Online Tools to Improve Visuospatial Skills of Engineering Students.* The University of Illinois College of Engineering Strategic Instructional Innovations Program (SIIP). 2016-2019

ACADEMIC HONORS

Graduate College Conference Participation Awards	May 2021
Honorable Mention at CHI Play 20	Nov 2020
Harry Triandis Award	May 2016
James E. Spoor Scholarship	May 2016

SERVICES

Associate Chair: CHI 21 Late Breaking Works, CSCW 21 Poster, CSCW 22

Reviewer: CHI 20-22 [Outstanding Reviews 22], CSCW 19-22, IUI 17-20, CHI PLAY 18-21, ECSCW 21, ACM Transactions on Interactive Intelligent Systems (TiiS), International Journal of Human-Computer Interaction (IJHCI), Cognitive Systems

Student Volunteer: CHI 17, CSCW 20