

# ZIANG XIAO

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## EDUCATION

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### University of Illinois at Urbana-Champaign

2016-2022 [expected]

Ph.D Candidate in Computer Science

Co-Advised by Prof. Hari Sundaram and Prof. 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 Prof. Dov Cohen

## RESEARCH SUMMARY

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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? In my doctoral work, I have been examining this topic in the context of behavioral science research by integrating AI into survey methods. As many decision-makers rely on survey to understand their stakeholders and make real-world decisions, even a tiny improvement in survey quality could tremendously improve our life. I design and build conversational agents to conduct engaging surveys while collecting high-quality information.

## RESEARCH EXPERIENCE

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### 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 semantic 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 algorithm 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 real-world educational setting
- Designed and developed an educational game “Cubicle” for spatial visualization skill training

## PUBLICATIONS \* Indicates authors contribute equally to the work.

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- 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]
- c10. **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. *Contestability 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)
- c9. 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).
- c8. 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**]
- c7. **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).
- c6. **Xiao, Z.**, Zuo, S., Zhao, J., Fu, W., Goldstein, M., Philpott, M., Laystrom-Woodard, J., Pool, M., Wolters, A. and Woodard, B. 2021. *Understanding Interrelated Growth Mindset and Academic Participation & Performance*. Proc. 127th ASEE Annual Conference and Exposition (ASEE '20).
- 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

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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

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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

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|                                     |                              |
|-------------------------------------|------------------------------|
| 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

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*Assisted in the grant preparation*

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

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

*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

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| 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

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

**Reviewer:** CHI 20-22, 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)

**Student Volunteer:** CHI 17, CSCW 20