Keyang Zheng

kez20@pitt.edu | +1 412-641-0594 | https://keyangz.me

EDUCATION

University of Pittsburgh, Pittsburgh, US — Fall 2018 – Present
School of Computing and Information — Expected to graduate in 2025
Ph.D. in Information Science
Advisor: Rosta Farzan

University of Pittsburgh, Pittsburgh, US — 2016 - 2018
School of Computing and Information
M.S. in Information Science

Nanjing University, Nanjing, China — 2012 - 2016
Software Institute
B.E. Computer Software Engineering
Outstanding Student Leadership Award in the Software Institute (2013)

RELVANT EXPERIENCE

Graduate Researcher — Sept 2023 – Present
Sustainable Social Computing lab, University of Pittsburgh, US

- Modeling players' non-verbal communication and collaboration behaviors using machine learning methods through the analysis of the game log data in multiplayer games.
- Designing communication frameworks for bots/AIs in multiplayer games promoting communication between human players and bots/AIs in a hybrid human-AI team.
- Conducting user studies on the effectiveness of the developed communicative agent and players' perceptions on their AI teammates.
- Publications in ACM Transactions on Social Computing, CHI Play.

Teaching Fellow / Lecturer — Jan 2024 – Present
School of Computing and Information, University of Pittsburgh, US

- Serving as the lecturer for undergraduate level courses *INFSCI 0201 INTERMEDIATE PROGRAMMING WITH PYTHON* since Fall 2024 semester, served as the lecturer for undergraduate courses *INFSCI 0510 Data Analysis* in Spring and Summer semesters in 2024.
- Given guest lectures on Team Communication in Virtual World for the graduate course *INFSCI 2430 Social Computing*.

Research Assistant — Dec 2019 – Aug 2023
Robotic Institute, Carnegie Melon University, US

- Modeled people's decision making and collaborative behaviors during a search and rescue mission in Minecraft through the analysis of game log data.

- Designed models to identify misbeliefs or information imbalance among team members, and interventions to target these obstacles in team collaboration using deep reinforcement learning agents.
- Multiple publications in IEEE International Conference on Systems, Man, and Cybernetics (SMC), Human Factors and Ergonomics Society, etc.

Research Assistant Aug 2018 – Apr 2020

Graduate School of Public Health, University of Pittsburgh, US

- Participated in the development of Framework for Reconstructing Epidemiological Dynamics (FRED) Software for agent-based modeling.
- Developed a preliminary agent-based model on community influence of alcohol/substance abuse behaviors.

SKILLS

Programming | Python (Pandas, scikit-learn, PyTorch) • Java • SQL • Lua • R • JavaScript • HTML/CSS

TALKS AND PRESENTATIONS

Shared Deliberation in Facebook Support Groups for Sickle Cell Patients and Caregivers
Foundation for Sickle Cell Disease Research, Miami, US April 2017

Exploration of online health support groups through the lens of sentiment analysis.
iConference 2018, Sheffield, UK March 2018

Understanding Player's Gesture-Based Communicative Behavior in MOBA Games.
The Annual Symposium on Computer-Human Interaction in Play, Stratford, Canada Oct 2023

HONORS & AWARDS

Outstanding Student Leadership Award in the Software Institute 2013
Catherine Ofiesh and Gerald Orner Award 2018

COMMUNITY SERVICE

Reviewer
WWW 2018, 2019
CSCW 2021, 2023
CHI Play 2022, 2023
IEEE Transaction on Human-Machine Systems

PUBLICATIONS

Zheng, K., Li, A., & Farzan, R. (2018). Exploration of online health support groups through the lens of sentiment analysis. In Transforming Digital Worlds: 13th International Conference, iConference 2018, Sheffield, UK, March 25-28, 2018, Proceedings 13 (pp. 145-151). Springer International Publishing.

Li, H., Zheng, K., Lewis, M., Hughes, D., & Sycara, K. (2021, September). Human theory of mind inference in search and rescue tasks. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 65, No. 1, pp. 648-652). Sage CA: Los Angeles, CA: SAGE Publications.

Li, H., Le, L., Chis, M., Zheng, K., Hughes, D., Lewis, M., & Sycara, K. (2023, January). Sequential theory of mind modeling in team search and rescue tasks. In Computational Theory of Mind for Human-Machine Teams: First International Symposium, ToM for Teams 2021, Virtual Event, November 4–6, 2021, Revised Selected Papers (pp. 158-172). Cham: Springer Nature Switzerland.

Zheng, K., Stein, B., & Farzan, R. (2023). Use Ping Wisely: A Study of Team Communication and Performance under Lean Affordance. ACM Transactions on Social Computing, 5(1-4), 1-26.

Zheng, K., & Farzan, R. (2023). Understanding Player's Gesture-Based Communicative Behavior in MOBA Games. Proceedings of the ACM on Human-Computer Interaction, 7(CHI PLAY), 1068-1090.

Chis, M., Li, H., Zheng, K., Lewis, M., Hughes, D., & Sycara, K. (2023, October). The Cognitive Load–Productivity Tradeoff in Task Switching. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (p. 21695067231193677). Sage CA: Los Angeles, CA: SAGE Publications.

Li, H., Chis, M., Zheng, K., Lewis, M., Hughes, D., & Sycara, K. (2023, September). Sentiment analysis of Artificial Advisors in Search and Rescue Tasks. In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 67, No. 1, pp. 2564-2570). Sage CA: Los Angeles, CA: SAGE Publications.

Li, H., Fan, Y., Zheng, K., Lewis, M., & Sycara, K. (2023). Personalized Decision Supports based on Theory of Mind Modeling and Explainable Reinforcement Learning. arXiv preprint arXiv:2312.08397.

Hughes, D., Li, H., Chis, M., Oguntola, I., Stepputtis, S., Zheng, K., Campbell, J., Sycara, K. and Lewis, M. (2023, October). A Framework for Intervention Based Team Support in Time Critical Tasks. In 2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC) (pp. 4805-4812). IEEE.