

Keyang Zheng

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EDUCATION

University of Pittsburgh Pittsburgh, US
School of Computing and Information Fall 2018 – May 2026
Ph.D. in Information Science (Defended on 23 March 2026)
Advisor: Rosta Farzan

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

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

LANGUAGES

Chinese: Native
English: CEFR C2 (Proficient)

TEACHING EXPERIENCE

Module Instructor (Sole Responsibility)
INFSCI 0510 Data Analysis Spring 2024, Summer 2024, Fall 2025, Spring 2026
University of Pittsburgh
Sole instructor for undergraduate modules (40–55 students). Responsible for syllabus design, lecture delivery, assessment setting and marking, and individualised student feedback.

INFSCI 0201 Intermediate Programming with Python Fall 2024, Spring 2025
University of Pittsburgh
Sole instructor for undergraduate modules (10–20 students). Responsible for syllabus design, lecture delivery, coding laboratory design, assessment setting and marking, and individualized student feedback.

Teaching Assistant
INFSCI 2430 Social Computing Fall 2023
Guest Lecture: Team Communication in Virtual World
University of Pittsburgh

INFSCI 2160/1530 Data Mining Fall 2023
University of Pittsburgh

RESEARCH EXPERIENCE

University of Pittsburgh

Pittsburgh, US

Doctoral Researcher, School of Computing and Information

Sept 2023 – Present

- Investigated team collaboration behaviors in competitive online multiplayer games, with a focus on team communications in non-verbal format.
- Modeling human communication behavior through log data analysis and user interviews.
- Developed a framework for human-AI communication in hybrid teams to enhance the team experience and collaboration effectiveness.

Carnegie Mellon University

Pittsburgh, US

Research Assistant, Robotic Institute

Dec 2019 – Aug 2023

- As a member of the CMU-RI team, I participated in the Artificial Social Intelligence for Successful Teams project, with the aim of developing artificial agents to collaborate with human teams in virtual environments using targeted and contextually relevant interventions.
- Studied people's decision-making and collaborative behaviors in high-intensity environment, a simulated search and rescue mission in Minecraft, using analytical methods on game log data.
- Designed Theory of Mind based models to identify misbeliefs or information imbalance among team members, and interventions to target these obstacles in team collaboration using deep reinforcement learning agents.

University of Pittsburgh

Pittsburgh, US

Research Assistant, Graduate School of Public Health

Aug 2018 – Apr 2020

- 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.

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

SERVICE

Reviewer

CHI 2025

WWW 2018, 2019

CSCW 2021, 2023

CHI Play 2022, 2023, 2025

FDG 2026

IEEE Transaction on Human-Machine Systems

Associate Chair

CHI Play 2025 (Working in Progress Track)

PUBLICATIONS

Zheng, K., Healy, P., Wang, S., & Farzan, R. (2026). Toxic Pings: An Interview Study on Hostile Nonverbal Communication Among Teammates in DotA 2 and League of Legends. In Proceedings of the Foundations of Digital Games (FDG 2026). (accepted)

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, October). Personalized Decision Supports based on Theory of Mind Modeling and Explainable Reinforcement Learning. In *2023 IEEE International Conference on Systems, Man, and Cybernetics (SMC)* (pp. 4865-4870). IEEE.

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.

Zheng, K., Li, H., Sycara, K., & Lewis, M. (2021). Human Theory of Mind Inference in Search and Rescue Tasks.