Keyang Zheng

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RESEARCH INTEREST

My research interest lies at the interaction of Game Analytics, Team Communication, Distributed Collaboration, and Human Robot Teaming. I use computer games as a platform to study human player interactions in a team setting, and explore new technologies that facilitate effective human team communication and collaboration. Through increased understanding of human interactions within a team, I explore various methods to improve the teaming experience and effectiveness of human and robots/AIs.

EDUCATION

University of Pittsburgh Pittsburgh, US
School of Computing and Information Fall 2018 – Present
Ph.D. in Information Science Expected to graduate 2024
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)

RESEARCH EXPERIENCE

Carnegie Mellon University Pittsburgh, US
Research Assistant, Robotic Institute Dec 2019 – Present

- Studied people's decision making and collaborative behaviors during a search and rescue mission in Minecraft.
- 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.

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:

PUBLICATIONS

Zheng, K., Li, A., Farzan, R. (2018). Exploration of Online Health Support Groups Through the Lens of Sentiment Analysis. In: Chowdhury, G., McLeod, J., Gillet, V., Willett, P. (eds) Transforming Digital Worlds. iConference 2018. Lecture Notes in Computer Science(), vol 10766. Springer, Cham. https://doi.org/10.1007/978-3-319-78105-1_19

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.

Keyang Zheng and Rosta Farzan. 2023. Understanding Player's Gesture-Based Communicative Behavior in MOBA Games. Proc. ACM Hum.-Comput. Interact. 7, CHI PLAY, Article 415 (November 2023), 23 pages. https://doi.org/10.1145/3611061

TALKS AND PRESENTATIONS

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

HONORS & AWARDS

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

SKILLS

Programming | Python • Java • C++ • Lua • Swift • JS • HTML/CSS/Bootstrap
ML, STAT | R • PyTorch • Keras • scikit-learn
Content Creation | Photoshop • Premiere Pro • After Effects • Audition

SERVICE

Paper Reviewer
WWW 2018, 2019
CSCW 2021, 2023

CHI Play 2022, 2023
IEEE Transaction on Human-Machine Systems