

Michelle Zhao

mzhao2@andrew.cmu.edu • +1 (858) 761-3090 • mzhao98.github.io

RESEARCH

Human-robot interaction with a focus on active learning from feedback and uncertainty quantification.

EDUCATION

Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

- Ph.D. Student in Robotics
• Advisors: Henny Admoni and Reid Simmons
• Focus: Active Learning, Human-Robot Collaboration, Uncertainty Quantification

Aug 2020 – Feb 2026

California Institute of Technology, Pasadena, California, USA

- B.S. in Computer Science
• Minor: Information and Data Science

Sep 2016 – Jun 2020

PUBLICATIONS

CONFERENCES

- C11 Vats, S.*, Zhao, M.*, Callaghan, P., Jia, M., Likhachev M., Kroemer, O., Konidaris, G. (2025). Cost-Optimal Interactive Learning on the Job via Facility Location Planning. In Robotics: Science and Systems Conference (RSS).
- C10 Zhao, M., Admoni, H., Simmons R., Ramdas, A.*, Bajcsy, A.* (2025). Conformalized Interactive Imitation Learning: Handling Expert Shift and Intermittent Feedback. International Conference on Learning Representations (ICLR).
- C9 Tecson, M., Chen, D., Zhao, M., Simmons R., Erikson, Z. (2025). Leveraging Large Language Models for Preference-Based Sequence Prediction. In International Conference on Agents and Artificial Intelligence (ICAART).
- C8 Zhao, M., Simmons R., Admoni, H., Bajcsy, A. (2024). Conformalized Teleoperation: Confidently Mapping Human Inputs to High-Dimensional Robot Actions. In Robotics: Science and Systems (RSS).
- C7 Pandya, R.*, Zhao, M.*, Liu C., Simmons R., Admoni, H. (2024). Multi-Agent Strategy Explanations for Human-Robot Collaboration. In IEEE International Conference on Robotics and Automation (ICRA).
- C6 Zhao, M., Simmons R., Admoni, H. (2023). Learning Human Contribution Preferences in Collaborative Human-Robot Tasks. In Conference on Robot Learning (CoRL).
- C5 Zhao, M., Simmons R., Admoni, H. (2022). Coordination with Humans via Strategy Matching. In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
- C4 Eadeh, F. R., Zhao, M., Nguyen, T.N., Gupta, P., Gonzalez, C., Admoni, H., Woolley, A.W. (2022). Good for Me, but Bad for We: How Anger Can Motivate Individual Performance but Inhibit Teamwork. In ACM Collective Intelligence Conference.
- C3 Zhao, M.*, Eadeh F.*, Admoni, H. (2022). Evaluating and Predicting Collective Intelligence as a Latent Variable via Hidden Markov Models. In 15th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS).
- C2 Eadeh, F. R., Zhao, M., Nguyen, T.N., Gupta, P., Gonzalez, C., Admoni, H., Woolley, A.W. (2021). Does Anger Help or Hurt Individual and Team Performance? In ACM Collective Intelligence Conference.
- C1 Foust, R., Zhao, M., Oliver, S., Chung, S., Hadaegh, F. (2017). Distributed Control Of An Evolving Satellite Assembly During In-Orbit Construction. In 68th International Astronautical Congress.

PEER-REVIEWED JOURNAL ARTICLES

- J2 Zhao, M., Simmons, R., Admoni, H. (2022) The Role of Adaptation in Human-AI Teaming. In Topics in Cognitive Science (topiCS), Special Issue on Building the Socio-Cognitive Architecture of COHUMAN: Collective Human-Machine Intelligence.
- J1 Zhao, M.*, Eadeh F.*, Admoni, H. (2022). Teaching Agents to Understand Teamwork: Evaluating and Predicting Collective Intelligence as a Latent Variable via Hidden Markov Models. In Computers in Human Behavior Journal.

PEER-REVIEWED WORKSHOP PAPERS

- W7 Zhao, M., Admoni, H., Simmons R., Ramdas, A.*, Bajcsy, A.* (2025). Conformalized Interactive Imitation Learning: Handling Expert Shift and Intermittent Feedback. In 7th Robot Learning Workshop: Towards Robots with Human-Level Abilities; International Conference on Learning Representations
- W6 Moorman, N., Zhao, M., Leubbers, M., van Waveren, S., Simmons, R., Admoni, H., Gombolay, M. (2025). Bi-Directional Mental Model Reconciliation for Human-Robot Interaction with Large Language Models. In AAAI Workshop on Advancing Artificial Intelligence through Theory of Mind (ToM4AI); AAAI Conference on Artificial Intelligence.
- W5 Moorman, N., Zhao, M., Admoni, H., Simmons, R., Gombolay, M. (2024). Workshop on Aging in Place; ACM/IEEE International Conference on Human-Robot Interaction4.
- W4 Zhao, M., Zhu, H., Simmons, R., Bisk, Y., Admoni, H. (2024). Large Language Models as Proxies for Evaluating Collaborative Norms; HRI Workshop on Scarecrows in Oz: Large Language Models; ACM/IEEE International Conference on Human-Robot Interaction.
- W3 Morris, N., Zhao, M., Simmons, R., Admoni, H. (2023). Machine Teaching of Collaborative Policies for Human Inverse Reinforcement Learning, In RL-CONFORM Workshop: RL Meets HRI, Control, and Formal Methods; IEEE/RSJ International Conference on Intelligent Robots and Systems. **Best Poster Presentation Award**
- W2 Chen, D., Zhao, M., Simmons, R. Learning Human Preferences for Personalized Assistance in Household Tasks. (2023). In AAAI Workshop on User-Centric Artificial Intelligence for Assistance in At-Home Tasks; AAAI Conference on Artificial Intelligence.
- W1 Zhao, M., Simmons, R., Admoni, H. (2021). Adapting Language Complexity for AI-Based Assistance, In Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction and Workshop Your Study Design Workshop; International Conference on Human-Robot Interaction.

TALKS

- T10 “Active Data Gathering with DAgger” Sep 2025
 • Toyota Research Institute
- T9 “Conformal Risk Control” Dec 2024
 • CMU Intent Lab (PI: Andrea Bajcsy)
- T8 “Conformalized Teleoperation: Confidently Mapping Human Inputs to High-Dimensional Robot Actions” Jul 2024
 • Robotics: Science and Systems (RSS) 2024.
- T7 “HRI for Aging in Place” Apr 2024
 • NSF AI Institute for Collaborative Assistance and Responsive Interaction for Networked Groups (AI-CARING) Student Symposium 2024.
- T6 “Conformalized Assistive Teleoperation: Confidently Mapping Human Inputs to High-Dimensional Robot Actions” Mar 2024
 • CMU Intent Lab (PI: Andrea Bajcsy), CMU LeCAR (Learning and Control for Agile Robotics) Lab (PI: Guanya Shi).
- T5 “Towards Proactive, Collaborative Robots” Feb 2024
 • CMU Robotic Caregiving and Human Interaction (RCHI) Lab (PI: Zackory Erickson).
- T4 “Examining the Role of Adaptation in Human-Robot Collaboration” Mar 2023
 • The MITRE Corporation: Human-Machine Teaming Community of Interest Discussion Session
- T3 “Coordination with Humans via Strategy Matching” Oct 2022
 • IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) 2022
- T2 “Evaluating and Predicting Collective Intelligence as a Latent Variable via Hidden Markov Models.” Sep 2022
 • 15th International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS)
- T1 “Adapting Language Complexity for AI-Based Assistance” Mar 2021
 • Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction; International Conference on Human-Robot Interaction

FELLOWSHIPS & AWARDS

- **Siebel Scholarship**, \$35,000 academic merit award toward final year of PhD study. 2025
- **Future Digileaders**, Conference bringing together global research leaders and rising stars working to drive digital transformation across academia, industry, government, and civil society. 2025
- **Rising Stars in Computational and Data Sciences**, The Oden Institute for Computational Engineering & Sciences, held at The University of Texas at Austin. 2025
- **HRI Pioneers 2025 Honorable Mention** 2025
- **DoD NDSEG Fellowship**, Carnegie Mellon University 2022
- **NCWIT Collegiate Award, Finalist** 2022
- **Uber PhD Fellowship**, Carnegie Mellon University 2021
- **George W. Housner Student Discovery Award**, California Institute of Technology 2019
- **Beckman Coulter Scholarship** 2016
- **Intuit Scott Cook Award** 2016
- **Dollars for Scholars Scholarship** 2016

ACADEMIC SERVICE

Workshop and Conference Organization

- Co-Organizer, *2nd Workshop on Semantic Reasoning and Goal Understanding in Robotics (SemRob)*, *Robotics Science and Systems Conference (RSS 2025)*, June 2025
- Co-Organizer, *Lifelong Learning and Personalization in Long-Term Human-Robot Interaction (LEAP-HRI)*, *20th ACM/IEEE International Conference on Human-Robot Interaction*, March 2025
- Co-Organizer, *Fall AAI Symposium on AI for Aging in Place*, November 2024, Washington D.C.
- Co-Organizer, *AI-CARING Student Symposium 2024*, University of Massachusetts at Lowell, 2024
- Co-Organizer, *Workshop on HRI for Aging in Place*, *ACM/IEEE International Conference on Human-Robot Interaction*, 2024
- Program Committee, *MULTITRUST2: International Workshop on Multidisciplinary Perspectives on Human-AI Team Trust*, *HAI conference*, 2024
- Program Committee, *MULTITRUST: International Workshop on Multidisciplinary Perspectives on Human-AI Team Trust*, *HAI conference*, 2023
- Co-Organizer, *AI-CARING Student Symposium 2023*, CMU, 2023
- Reviewer, *RSS*, *ICRA*, *IROS*, *HAI*, *CORL*, *TIIS*, *HRI*, *ICLR* (notable reviewer), *INGroup*, *THRI*, *ISRR*, *IEEE RA-L*

Membership and Involvement

- CMU Human-Robot Interaction Reading Group, *Co-Organizer*, 2020-current
- CMU HRI Winter Holiday Potluck, *Co-Organizer*, Dec 2024, Dec 2025
- CMU RI Graduate Student Orientation, *Volunteer*, 2023-2024
- CMU SCS DEI Lecture Series Committee, *Member*, 2023- 2024
- CMU HRI Summer Picnic, *Organizer*, June 2024
- RI Women and Non-binary Lunches Group, *Co-organizer*, Oct 2022 -Dec 2024
- CMU RI Climate Committee, *Member*, 2022-2024
- CMU AI/ML Mentoring Program, *Graduate student mentor*, 2020-2024
- CMU SCS Dean's PhD Student Advisory Committee Anti-Racism Working Group, *Student member*, 2020-2021

TEACHING

Co-Instructor

- Human Robot Interaction (Undergraduate), Spring 2025. Co-Instructor: Zackory Erickson

Eberly Future Faculty Program (Completed, Spring 2024.)

Graduate Teaching Assistant

- Human Robot Interaction (Graduate), Fall 2022. Instructor: Henny Admoni
- Human Robot Interaction (Undergraduate), Spring 2022. Instructor: Henny Admoni

Guest Lectures

- "Conformalized Teleoperation: Uncertainty Quantification in Shared Autonomy", Fall 2024
University of Michigan ROB 498/599: Computational HRI (Graduate),
Instructor: Christoforos Mavrogiannis.
- "Alignment and Active Learning in HRI", Fall 2024
CMU 16-867: Human Robot Interaction (Graduate),
Instructor: Andrea Bajcsy.
- "Implicit Communication", Fall 2022

CMU 16-867: Human Robot Interaction (Graduate),

Instructor: Henny Admoni.

Undergraduate Teaching Assistant

- Networks: Structure and Economics, Winter 2020. Instructor: Adam Wierman
- Machine Learning and Data Mining, Winter 2019. Instructor: Yisong Yue
- Machine Learning Systems, Fall 2018. Instructor: Yaser Abu-Mostafa

MENTORING

- Ashley Lee, 2025, *Undergraduate*
- Ethan Villalovoz, 2024, *Undergraduate, REU*
- Michaela Tecson, 2023-2024, *MS in Robotics*
- Nyomi Morris, 2023, *Undergraduate, REU*, PhD student at Colorado School of Mines
- Narit Trikasemsak, 2023, *Undergraduate, REU*
- Daphne Chen, 2022-2023, *MS in Robotics*, PhD student at University of Washington
- Yize (Sean) Shen, 2022, *Undergraduate*
- Thomas Cantalapiedra, 2022, *Undergraduate*
- Yitong (David) Chen, 2022, *Undergraduate*
- Timothy Hyun, 2022, *Undergraduate*

INTERNSHIPS

Toyota Research Institute, Large Behavior Models, Los Altos, California, USA

Research Intern - PhD

May 2025 – Sep 2025

- Team: Trustworthy Learning Under Uncertainty
- Active data gathering and online interactive imitation learning (Dagger) for generative policies for bimanual manipulation.

[CV compiled on 2026-03-26]