Michelle Zhao

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

ACADEMIC APPOINTMENTS

Indiana University Bloomington, Bloomington, Indiana, USA

- Assistant Professor of Computer Science — Aug 2026 – Present
  - Luddy School of Informatics, Computing, and Engineering
  - Director, Reliable Interactive Autonomy (RIA) Lab

EDUCATION

Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

- Ph.D. in Robotics, School of Computer Science — Aug 2020 – Jul 2026
  - Committee: Henny Admoni (Co-Chair), Reid Simmons (Co-Chair), Andrea Bajcsy, Anirudha Majumdar
  - Disssertation: *Integrating Learning and Collaboration for Human-Robot Alignment*

California Institute of Technology, Pasadena, California, USA

- B.S. in Computer Science — Sep 2016 – Jun 2020
  - Minor: Information and Data Science

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 COHUMAIN: 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
- **Siebel Scholars Foundation**, 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 AAAI 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, HHAI conference, 2024*
- Program Committee, *MULTITRUST: International Workshop on Multidisciplinary Perspectives on Human-AI Team Trust, HHAI conference, 2023*
- Co-Organizer, *AI-CARING Student Symposium 2023, CMU, 2023*
- Reviewer, *RSS, ICRA, IROS, HHAI, 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 2026-08-12*]