Michelle Zhao

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RESEARCH INTERESTS

Theory and applications of machine learning for human-robot interaction with a focus on reinforcement learning and interactive, adaptive systems.

EDUCATION

Carnegie Mellon University, Pittsburgh, Pennsylvania, USA

- Ph.D. Student in Robotics — Aug 2020 – Current
  - Advisors: Henny Admoni and Reid Simmons
  - Focus: Human-AI teaming, Imitation Learning, Reinforcement Learning.

California Institute of Technology, Pasadena, California, USA

- B.S. in Computer Science — Sep 2016 – Jun 2020
  - Cumulative GPA: 3.82 / 4.00
  - Minor: Information and Data Science

PUBLICATIONS

CONFERENCES

C2 Eadeh, F. R., Zhao, M., Nguyen, T.N., Gupta, P., Gonzalez, C., Admoni, H., Woolley, A.W. (June 2021). Does anger help or hurt individual and team performance? ACM Collective Intelligence Conference 2021.

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, 25-29 September 2017, Adelaide, Australia.

PEER-REVIEWED WORKSHOP PAPERS

W1 Zhao, M., Simmons, R., Admoni, H. Adapting Language Complexity for AI-Based Assistance, In Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction; International Conference on Human-Robot Interaction, March 2021.

POSTER PRESENTATIONS

P2 Eadeh, F. R., Zhao, M., Nguyen, T.N., Gupta, P., Gonzalez, C., Admoni, H., Woolley, A.W. (October 2021). Can't Get You Off of My Mind: The Detrimental Effects of Anger and Rumination for Team Performance. Poster presentation at the 16th annual INGRoup conference, Virtual Presentation.

P1 Eadeh, F. R., Zhao, M., Nguyen, T.N., Gupta, P., Gonzalez, C., Admoni, H., Woolley, A.W. (June 2021). Does anger help or hurt individual and team performance? Poster presentation at the 16th annual INGRoup conference, Virtual Presentation.

TALKS

"Adapting Language Complexity for AI-Based Assistance" — Mar 2021

- In Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction; International Conference on Human-Robot Interaction
- In Workshop Your Study Design; International Conference on Human-Robot Interaction

"Distributed Control of Swarm Robot Formation and Assembly; Methods for Navigation in GPS Denied Environments" — Sep 2017

- Caltech Summer Undergraduate Research Fellowship Seminar

FELLOWSHIPS & AWARDS

- **Uber PhD Fellowship**, Carnegie Mellon University — 2021
- **George W. Housner Student Discovery Award**, California Institute of Technology — 2019
  Funding for research and scholarly activities.
- **Beckman Coulter Scholarship** — 2016
  Scholarship for STEM-focused study and research.
- **Intuit Scott Cook Award** — 2016
- **Dollars for Scholars Scholarship** — 2016
  Undergraduate scholarship

ACADEMIC SERVICE

- CMU AI/ML Mentoring Program, *Graduate student mentor*

GRADUATE COURSEWORK

Human Robot Interaction (Graduate), Fall 2021. Instructor: Henny Admoni
Probabilistic Graphical Models, Fall 2021. Instructor: Pradeep Ravikumar
Kinematics, Dynamics, and Control, Spring 2021. Instructor: Harmut Geyer
Computer Vision, Spring 2021. Instructor: Deva Ramanan
Introduction to Machine Learning (PhD), Fall 2020. Instructor: Ziv Bar-Joseph, Eric Xing
Math Fundamentals for Robotics, Fall 2020. Instructor: Michael Erdmann

TEACHING

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
- Java Computer Programming Lab, Fall 2017. Instructor: Donnie Pinkston

OTHER WORK EXPERIENCE

Virtualitics, Los Angeles, California, USA

Machine Learning Intern — Jun 2020 – Sep 2020

- Developed a named entity recognition pipeline for processing natural language datasets
- Built an outlier and error detection system using a voting-based model of several anomaly detection techniques.
- Developed a classifier for breast cancer tumor detection.
- Analyzed runtimes and capabilities of six graph visualization software (whitepaper).

Goldman Sachs, New York, New York, USA

Summer Analyst — May 2019 – Aug 2019

- Predicted intraday trade volume and distribution using spline regression and autoregressive techniques.
- Analyzed usage of internal applications in order to propose directions for the upcoming update.

Vectra Networks, San Jose, California, USA

Data Science Intern — Jun 2018 – Sep 2018

- Developed machine-learning based algorithms to predict normal, recurrent behavior in network traffic anomaly patterns, using random forests and logistic regression models.
- Engineered predictive models for detecting anomalies in the timing of network authentication requests.

Caltech Aerospace Robotics and Control Lab, Pasadena, California, USA

Undergraduate Research Fellow — May 2017 – Oct 2017

- Designed a computer-vision based approach to aerial navigation in GPS-denied environments using road extraction and designed a novel docking mechanism for multi-agent robot formations.
- Programmed a multi-agent swarm robot system and with an offline distributed control algorithm.

[*CV compiled on 2021-09-12*]