

TAYLOR A. KESSLER FAULKNER

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ACADEMIC EMPLOYMENT

University of Washington

September 2024 - present

Lecturer and Program Manager for the Graduate Certificate in Modern AI Methods

University of Washington

September 2022 - August 2024

Postdoctoral Scholar, supervised by Prof. Siddhartha Srinivasa

Research Project: Autonomous Robot Feeding with Assistive Dexterous Arm (ADA)

EDUCATION

The University of Texas at Austin

August 2016 - August 2022

PhD in Computer Science, advised by Prof. Andrea Thomaz

Thesis: Learning robot policies from imperfect human teachers

Research areas: Artificial Intelligence, Reinforcement Learning, Robotics, Human-Robot Interaction

Committee: Andrea L. Thomaz, Manuela Veloso, Peter Stone, Elaine Short, Constantine Caramanis

Denison University, summa cum laude

August 2012 - May 2016

B.S. in Computer Science, Minors in Mathematics and Music Performance

TEACHING AND PROGRAM DESIGN

Graduate Certificate in Modern AI Methods

Autumn 2024-present

- ▷ Led the development of a new graduate certificate for the Paul G. Allen School of Computer Science & Engineering.
- ▷ Worked with professors and UW administration to propose and build this certificate.
- ▷ Collaborated with other College of Engineering programs – The Master of Science in Artificial Intelligence and Machine Learning for Engineering and Master’s of Engineering in Multidisciplinary Engineering – to include the Modern AI Methods certificate as an option for stacked master’s students.
- ▷ Designed new curriculum for the first course in the certificate, Modern AI Methods. New curriculum focuses on application of AI/ML skills, understanding of the mathematical background behind AI/ML models and algorithms, and ethical considerations in AI/ML.
- ▷ Worked with professors to design curricula for the other three new courses for the certificate: Natural Language Processing, Computer Vision, and Putting Artificial Intelligence to Use. Submitted these curricula through the UW Curriculum Management System.
- ▷ Oversaw recruitment and admissions for the first year of the program, recruiting 25 students in a short time span, which generated revenue in the first year of the new certificate.
- ▷ Developed admissions materials including essay prompts and different ways for students with diverse backgrounds to show their grasp of prerequisite knowledge. Recruited professors to the review committee and reviewed applications in both staff and faculty review rounds. Compiled application data to gain insights into future recruiting avenues.
- ▷ Currently overseeing recruitment and advertising for the second year of the certificate, with an eye towards growing enrollment numbers.

CSE D 501: Modern AI Methods

Autumn 2025

- ▷ Taught newly developed curriculum on AI and ML methods to professional students. Topics include Regression, Classification, Clustering, Reinforcement Learning, and Neural Networks. Website can be found at <https://sites.google.com/cs.washington.edu/cse-d-501>; course materials are not currently public-facing, but are available upon request.

CSE 473: Introduction to Artificial Intelligence

Spring 2025, Winter 2026

- ▷ Instructed undergraduate majors from Computer Science & Engineering on Artificial Intelligence methods. Topics include problem solving and search, game playing, knowledge representation and reasoning, uncertainty, machine learning, natural language processing.

CSE/STAT 416: Introduction to Machine Learning

Winter 2025, Spring 2026

- ▷ Instructed undergraduate students on Machine Learning methods. Topics include regression, classification, clustering, retrieval, recommender systems, and deep learning, with a focus on an intuitive understanding grounded in real-world applications

The Self Driving Car: Intro to AI For Mobile Robots (ECE P 545)

Autumn 2024

- ▷ Instructed professional master's students on AI and planning methods for mobile autonomous cars. Added weekly quizzes to gauge student understanding and solicit course feedback. Topics include ROS, algorithms from state estimation, control, planning, perception, and learning, and implementing these algorithms on a mobile robot platform.

Co-instructor of Autonomous Robotics (CSE 478)

Spring 2023, Spring 2024

- ▷ Expanded the Ethics in Robotics/AI section to include new topics on trust and bias. Designed discussion section format to facilitate lively discourse in a 40+ student class. Led discussion sections, co-designed quizzes, and gave lectures on select machine learning and planning topics. Course material for Spring '24 can be found at <https://courses.cs.washington.edu/courses/cse478/24sp/>.

MENTORING

Student Research Mentor at UW

September 2022 - present

- ▷ Mentored multiple graduate and undergraduate students on research projects, providing feedback and advice on research methods and giving detailed feedback on papers. See publications [2,3] in Conference and Journal Publications, and [1,2,3,4] in Refereed Workshops, Posters, and Abstracts.

Student Research Mentor at UT Austin

- ▷ Mentored multiple undergraduate students on research projects, providing feedback and advice on research methods and giving detailed feedback on papers. One student's project on deep learning interactive reinforcement learning methods was published at the AAAI-21 Student Abstract and Poster Program and included in a workshop at the 29th International Joint Conference on Artificial Intelligence (see publications [9,10] in Refereed Workshops, Posters, and Demos).

Women in CS Mentor

September - December 2019, 2020

- ▷ Mentored undergraduate women through the UT Austin Women in CS Mentorship Program, providing advice on applying and preparing for graduate school

INVITED SPEAKER

Panelist for Women in Computing (WiC) International Women's Day Celebration March 3, 2026

- ▷ Invited as a panelist to answer questions on my career and experiences as a woman in computing.

Speaker for Women in Computing (WiC) Fireside Chat on AI February 2, 2026

- ▷ Invited for a hour-long chat with WiC members on AI and research.

Moderator for Bellevue Chamber of Commerce AI Panel November 13, 2025

- ▷ Invited to moderate Bellevue Chamber Executive Business Roundtable: AI Impacts in the Workplace panel. Facilitated discussion on AI between panelists from law and academic backgrounds.

Seattle Association for Women in Science (AWIS) January 15, 2025

- ▷ Invited to speak on assistive feeding robotics research for Seattle AWIS.

Guest Lecturer for Introduction to Human-Robot Systems at UMich April 10, 2024

- ▷ Guest lectured for Prof. Christoforos Mavrogiannis at the University of Michigan on research topics in human-robot interaction and machine learning. Introduced Markov Decision Processes (MDPs) and reinforcement learning to the class.

Cornell Robotics Seminar April 25, 2024

- ▷ Presented the Personal Robotics Lab's recent research on robot-assisted feeding for the Cornell Robotics Seminar series.

Northwest Regional Spinal Cord Injury System November 8, 2023

- ▷ Presented the Personal Robotics Lab's recent research on robot-assisted feeding for the Northwest Regional SCI seminar series.

Sammamish Tech Fest September 23, 2023

- ▷ Presented the Personal Robotics Lab's research for several FIRST Robotics teams.

Workshop talk at the International Conference on Machine Learning (ICML) July 29, 2023

- Presented research on robot learning from human teachers at the Interactive Learning with Implicit Human Feedback Workshop. More details and a video can be found at <https://icml.cc/virtual/2023/29861>.

Talking Robotics January 25, 2023

- ▷ Presented my research for the Talking Robotics seminar series. More details and a video can be found at <https://talking-robotics.github.io/talks/taylor/>.

University of Washington Allen School Colloquium December 1, 2022

- ▷ Presented the Personal Robotics Lab's research for the Allen School Colloquium as part of the Robotics Research Group.

University of Washington Robotics Colloquium January 21, 2022 and October 21, 2022

- ▷ Presented a research talk for the Robotics Colloquium at the University of Washington. A video of the January colloquium can be found at <https://youtu.be/SDraGFHn888?si=Imw6LJMaAJz8Ad74>.

The San Francisco Bay Area Chapter of ACM SIGCHI February 9, 2021

- ▷ Presented my graduate research for the Bay Area Chapter of ACM SIGCHI. A video can be found at https://www.youtube.com/watch?v=DQu06_W7mDo.

UTCS Summer Robotics Camp

August 2019, July 2020, July 2021

- ▷ Presented for the UTCS Summer Robotics Camp on published research, the Socially Intelligent Machines Lab, and a short tutorial on Reinforcement Learning.

Presenter for UT Austin First-Year Interest Group

November 2018, April 2019

- ▷ Introduced Human-Robot Interaction concepts and research to a First-Year Interest Group, an introductory undergraduate course.

GRADUATE AND POST-GRADUATE RESEARCH EXPERIENCE

University of Washington

Department of Computer Science and Engineering, Personal Robotics Lab

Postdoctoral Scholar – September 2022 - August 2024

Advisor: Prof. Siddhartha Srinivasa

- ▷ Led the Assistive Dexterous Arm (ADA) project in the Personal Robotics Lab. ADA is a robot-assisted feeding system designed for users with upper-extremity mobility impairments.

The University of Texas at Austin

Department of Electrical and Computer Engineering, Socially Intelligent Machines Lab

Graduate Researcher – August 2016-August 2022

Advisor: Prof. Andrea Thomaz

- ▷ Developed algorithms to enable robots to learn from partially inattentive or inaccurate teachers using interactive Reinforcement Learning. Designed and conducted experiments in simulation, on physical robots, and with human subjects to evaluate these algorithms.

PROFESSIONAL SERVICE

PRL Youth Research Program

January 2023 - September 2024

This program let high school students work on robotics problems with the Personal Robotics Lab (PRL).

- ▷ Proposed and registered a new youth research program through the Youth Program Registration System at UW
- ▷ Oversaw training of graduate student mentors in youth safety and education
- ▷ Communicated with high school students about research expectations and robot safety.
- ▷ Oversaw high school students' research projects, with one student contributing to a published paper

Other UW Service

- ▷ Served on the review committee for the Postdoc Research Award in Spring 2025 for the Paul G. Allen School of Computer Science & Engineering.
- ▷ Collaborated with UW CSE outreach to present robotics demos to middle- and high-school students on multiple occasions.
- ▷ Led two robotics presentations for local FIRST Robotics teams, focusing on an introduction to research ideas and different possibilities for working in robotics as a career.

Workshops

- ▷ Co-organizer and program committee member of a workshop at the ACM/IEEE International Conference on Human-Robot Interaction (HRI '24), titled Assistive Applications, Accessibility, and Disability Ethics (<https://a3de-hri.github.io/>). Acted as a program committee member, distributing and reviewing papers.
- ▷ Co-organized a workshop at the ACM/IEEE International Conference on Human-Robot Interaction (HRI '22), titled Human-Robot Interactive Learning. Communicated with invited speakers, designed discussion groups, and led a speaker Q&A as well as moderating the discussion group on Learning from Imperfect Teachers. Also co-organized the followup workshop at the ACM/IEEE International Conference on Human-Robot Interaction (HRI '23), titled 2nd Workshop on Human-Robot Interactive Learning (<https://sites.google.com/utexas.edu/hirl/home>).
- ▷ Organized a workshop/retreat for the Robotic Assisted Feeding community, hosted at the University of Washington. Scheduled the workshop with seven different labs from six different universities, main point of contact for all participants, called for extended abstracts from students, recruited two keynote speakers, led discussions, and worked with university staff and students to set up food, meeting spaces, demos, and a hybrid setup to enable several participants to join remotely.
- ▷ Member of the organizing committee for RSS Pioneers at the Robotics: Science and Systems conference (RSS '22). Helped with idea generation for interactions between participants and invited speakers.

Conference and Journal Reviews

- ▷ Reviewer for multiple robotics conferences and journals, including: the International Conference on Human-Robot Interaction (HRI), International Conference on Robotics and Automation (ICRA), Transactions on Human Robotics Interaction, and ACM Transactions on Computer Human Interaction.

SELECT HONORS AND AWARDS

- ▷ **UW Data Science Postdoctoral Fellow** September 2022 - August 2024
- ▷ **UT Austin Graduate School Dissertation Writing Fellowship** January 2022-August 2022
- ▷ **NSF Graduate Research Fellowship** September 2016 - May 2021
- ▷ **Human-Robot Interaction Pioneer** March 2021
 - Invited to participate in a premiere workshop at the HRI 2021 conference, which accepted 18 out of 48 applications. Presented a thesis summary, Participated in in-depth discussions on the future of human-robot interactions, and networked with invited professors and industry professionals.
- ▷ **Robotics: Science and Systems Pioneer** July 2021
 - Invited to participate in an intensive workshop at the RSS 2021 conference, which accepted 30 out of 82 applications. Presented a thesis poster, and participated in conversations with invited professors.

- [1] J. Jaime, L. Rainbolt, I. Sathanur, **T. Kessler Faulkner**, and S. Srinivasa. Extending Robot-Assisted Feeding to Spoon-Based Foods with the Articutool: A Modular Active End-Effector. To be published in the IEEE/RSJ International Conference on Intelligent Robots and Systems. 2026.
- [2] K. Baraka, I. Idrees, **T. Kessler Faulkner**, E. Biyik, S. Booth, M. Chetouani, D. H. Grollman, A. Saran, E. Senft, S. Tulli, A. Vollmer, A. Andriella, H. Beierling, T. Horter, J. Kober, I. Sheidlower, M. E. Taylor, S. Van Waveren, X. Xiao. “Human-Interactive Robot Learning: Definition, Challenges, Recommendations.” *ACM Transactions on Human-Robot Interaction*. 2025.
- [3] A. Nanavati*, E. K. Gordon*, **T. Kessler Faulkner**, B. Zhu, T. Schrenk, J. Ko, A. Kashyap, R. Karim, H. Bolotski, R. Scalise, H. Song, R. Qu, M. Cakmak, S. S. Srinivasa. “Lessons Learned from Designing and Evaluating a Robot-Assisted Feeding System for Out-of-Lab Use.” *ACM/IEEE International Conference on Human-Robot Interaction*. 2025. **Best Systems Paper Award Finalist**
- [4] E. K. Gordon*, A. Nanavati*, R. Challa, B. Zhu, **T. Kessler Faulkner**, and S. Srinivasa, “Towards General Single-Utensil Food Acquisition with Human-Informed Actions.” In *Conference on Robot Learning (CoRL)*. 2023.
- [5] **T. Kessler Faulkner** and A. L. Thomaz, “Using Learning Curve Predictions to Learn from Incorrect Feedback.” *International Conference on Robotics and Automation*. 2023.
- [6] R. Mirsky, K. Baraka, **T. Kessler Faulkner**, J. Hart, X. Xiao, H. Yedidsion, I. Idrees, and E. K. Gordon. (2023, March). 2nd Workshop on Human-Interactive Robot Learning (HIRL). In *Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction* (pp. 947-949).
- [7] R. Mirsky, K. Baraka, **T. Kessler Faulkner**, J. Hart, H. Yedidsion, and X. Xiao. (2022, March). Human-Interactive Robot Learning (HIRL). In *2022 17th ACM/IEEE International Conference on Human-Robot Interaction (HRI)* (pp. 1278-1280). IEEE.
- [8] **T. Kessler Faulkner**, R. A. Gutierrez, E. S. Short, G. Hoffman, and A. L. Thomaz, “Active Attention-Modified Policy Shaping.” *International Conference on Autonomous Agents and Multi-agent Systems*. 2019.
- [9] **T. Kessler Faulkner**, E. S. Short, and A. L. Thomaz, “Interactive Reinforcement Learning with Inaccurate Feedback.” *International Conference on Robotics and Automation*. 2020.
- [10] M. L. Chang, **T. Kessler Faulkner**, T. B. Wei, E. S. Short, G. Anandaraman, A. L. Thomaz, “TASC: Teammate Algorithm for Shared Cooperation.” *Intelligent Robots and Systems (IROS)*, 2020 IEEE/RSJ International Conference on. IEEE, 2020.
- [11] **T. Kessler Faulkner**, E. S. Short, and A. L. Thomaz, “Policy Shaping with Supervisory Attention Driven Exploration.” *Intelligent Robots and Systems (IROS)*, 2018 IEEE/RSJ International Conference on. IEEE, 2018.
- [12] **T. Kessler Faulkner**, S. Niekum, and A. Thomaz, ‘Asking for Help Effectively via Modeling of Human Beliefs’, In *HRI ’18 Companion: 2018 ACM/IEEE International Conference on Human-Robot Interaction Companion*, March 5–8, 2018, Chicago, IL, USA (HRI ’18), 2 pages, 2018.
- [13] **T. Kessler Faulkner**, W. Brackenburg and A. Lall, “k-Regret Queries with Nonlinear Utilities”, *Proceedings of the Very Large Database Endowment*, vol. 8, no. 13, pp. 2098-2109, 2015.

- [1] A. Nanavati*, E. K. Gordon*, **T. Kessler Faulkner**, B. Zhu, T. Schrenk, J. Ko, A. Kashyap, R. Karim, H. Bolotski, R. Scalise, H. Song, R. Qu, M. Cakmak, S. S. Srinivasa. "Lessons Learned from Designing and Evaluating a Robot-Assisted Feeding System for Out-of-Lab Use." RSS 2026 Workshop on Human-centric Mobile Manipulation. 2026.
- [2] L. Rainbolt*, I. Sathanur*, J. Jaime, **T. Kessler Faulkner**, and S. Srinivasa. Study in Spoons. HRI workshop on Robots for Care, 2026.
- [3] E.K. Gordon*, R.K. Jenamani*, A. Nanavati*, Z. Liu, H. Bolotski, R. Karim, D. Stabile, A. Kashyap, B.H. Zhu, X. Dai, T. Schrenk, J. Ko, **T. Kessler Faulkner**, T. Bhattacharjee, and S. Srinivasa. An Adaptable, Safe, and Portable Robot-Assisted Feeding System. HRI Companion, 2024. Best Demo Award Winner.
- [4] A. Nanavati*, M. Pascher*, V. Ranganeni, E.K. Gordon, **T. Kessler Faulkner**, S. Srinivasa, M. Cakmak, P. Alves-Oliveira, and J. Gerken. Multiple Ways of Working with Users to Develop Physically Assistive Robots. HRI workshop on Assistive Application, Accessibility, and Disability Ethics, 2024.
- [5] E. K. Gordon, **T. Kessler Faulkner**, S. Srinivasa, "Balancing Flexibility and Precision in Assistive Food Manipulation." Presented at the Assistive Manipulation Workshop at the 2023 ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2023.
- [6] R. Karim, A. Nanavati, **T. Kessler Faulkner**, S. S. Srinivasa, "Investigating the Levels of Autonomy for Personalization in Assistive Robotics." Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction. 2023.
- [7] **T. Kessler Faulkner** and A. L. Thomaz, "Interactive Reinforcement Learning from Imperfect Teachers." Companion of the 2021 ACM/IEEE International Conference on Human-Robot Interaction. 2021.
- [8] **T. Kessler Faulkner**, E. S. Short, and A. L. Thomaz, "Towards Active Attention-Modified Policy Shaping." Presented at Workshop on Human/Robot In-The-Loop Machine Learning, Intelligent Robots and Systems (IROS), 2018 IEEE/RSJ International Conference on. October 2018.
- [9] **T. Kessler Faulkner**, S. Niekum, and A. Thomaz, "Robot Dialog Optimization via Optimization of Human Belief Updates", Presented at Workshop on Robot Communication in the Wild, Robotics: Science and Systems (RSS). July 2017.
- [10] **T. Kessler Faulkner**, S. Niekum, and A. Thomaz, "Robot Dialog Optimization via Optimization of Human Belief Updates", Poster presented at CRA-W Grad Cohort for Women, April 2017.
- [11] T. Wei, **T. Kessler Faulkner**, Andrea L. Thomaz, "Policy Shaping in Continuous State Spaces." Presented at Knowledge Based Reinforcement Learning Workshop at the 29th International Joint Conference on Artificial Intelligence (IJCAI 2020), January 2021.
- [12] T. Wei, **T. Kessler Faulkner**, Andrea L. Thomaz, "Extending Policy Shaping to Continuous State Spaces." Presented at AAAI-21 Student Abstract and Poster Program at the 35th Conference on Artificial Intelligence (AAAI-21), February 2021.