

Yuchen Cui

Assistant Professor
Computer Science Department
UCLA Samueli School of Engineering

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Academic Employment

July 2024 – current **Assistant Professor** in Computer Science
University of California, Los Angeles

Jan. 2022 – June 2024 **Postdoctoral Researcher** in Computer Science
Stanford University (*Advisor*: Dorsa Sadigh)

Education

Aug. 2015 – Dec. 2021 **Doctor of Philosophy** in Computer Science
The University of Texas at Austin (*Advisor*: Scott Niekum)
Thesis Title: Efficient Algorithms for Low-effort Human Teaching of Robots

Aug. 2011 – May 2015 **Bachelor of Science** in Computer Engineering (Highest Distinction)
Purdue University (West Lafayette)

Honors and Awards

ICRA Best Conference Paper	2024
EECS Rising Stars	2023
Human-centered AI Institute Postdoctoral Fellow, Stanford University	2023
Best Paper Finalist: RSS Workshop on Scaling Robot Learning	2022
Graduate School Professional Development Award, UT Austin	2022
RoboCup@Home Domestic Standard Platform League, 3rd Place	2017
Intel-Cornell Cup, 2nd Place	2015
College of Engineering Dean’s List, Purdue University	2011-2015

Internship Experience

May-Oct. 2021	Facebook AI Research	Remote (Pittsburgh, Pennsylvania)
May-Aug. 2019	Diligent Robotics	Austin, Texas
May-Aug. 2018	Honda Research Institute USA	Mountain View, California

Teaching Experience

2017-2018	CS343: Artificial Intelligence	UT Austin
2015-2016	CS313E: Elements of Software Design	UT Austin
2014	ECE337: ASIC Design Laboratory	Purdue University
2013	ECE364: Software Engineering Tools Lab	Purdue University
2012-2013	CS159: Programming Applications for Engineers	Purdue University

Professional Activities

- Speaker, Invited Talk on *Interactive Robot Learning from Non-Expert Human Teachers*, Mar. 2024, Georgia Tech
- Speaker, Invited Talk on *Interactive Robot Learning from Non-Expert Human Teachers*, Mar. 2024, ASU
- Speaker, Invited Talk on *Interactive Robot Learning from Non-Expert Human Teachers*, Feb. 2024, UCSB
- Speaker, Invited Talk on *Interactive Robot Learning from Non-Expert Human Teachers*, Feb. 2024, UT Austin
- Speaker, Spotlight Talk on *Robot Learning from Non-Expert Teachers*, Oct. 2023, Bay Area Robotics Symposium
- Speaker, Invited talk on *Online Language Correction via Shared Autonomy*, Mar. 2023, Georgia Tech
- Speaker, Invited talk on *Leveraging Foundation Models for Zero-shot Task Specification for Robotics*, Oct. 2022, Mila
- Speaker, Invited talk on *Designing Human-Aware Learning Agents*, Jul. 2022, Simons Institute
- Speaker, Invited talk on *Robot Learning from Low-effort Human Teaching*, Apr. 2021, Stanford University
- Speaker, Invited talk on *Learning from Low-effort Human Teaching*, Feb. 2021, UC Berkeley
- Speaker, Invited talk on *Learning from Implicit Human Feedback*, Nov. 2020, Tufts University
- Organizer, RLC 2024 Workshop on *Reinforcement Learning beyond Rewards*
- Organizer, RSS 2020 Workshop on *Advances & Challenges in Imitation Learning for Robotics*
- Co-Chair, Imitation Learning session, International Conference on Intelligent Robots and Systems (IROS) 2023
- Area Chair, International Conference on Learning Representations (ICLR) 2025
- Reviewer, Conference on Robot Learning (CoRL) 2020, 2021, 2022, 2023, 2024
- Reviewer, Conference on Neural Information Processing Systems (NeurIPS) 2020, 2021, 2023, 2024
- Reviewer, Robotics: Science and Systems (RSS) 2019, 2022, 2023, 2024
- Reviewer, International Conference on Learning Representations (ICLR) 2021, 2022, 2024
- Reviewer, International Conference on Human-Robot Interaction (HRI) 2022, 2023
- Reviewer, International Conference on Intelligent Robots and Systems (IROS) 2021, 2023
- Reviewer, International Conference on Machine Learning (ICML) 2021
- Reviewer, International Conference on Robotics and Automation (ICRA) 2019, 2021, 2022, 2023
- Reviewer, ACM Transactions on Human-Robot Interaction 2018, 2023

Outreach

- Mentor, Stanford SURF: advise undergraduate visiting research interns (2024)
- Mentor, Stanford UGVRI: advise undergraduate visiting research interns (2023)
- Volunteer Instructor, Covington Elementary: teach concepts of robotics to elementary school students (2023)
- Mentor, Stanford CURIS: advise undergraduate research interns in CS (2022)
- Mentor, UTCS Directed Research Program: lead paper discussions with undergraduate students (2021)
- Exhibitor, Explore UT: demonstrate robots for campus visitors (2018)
- Volunteer Instructor, Hour of Code: teach one-hour coding classes at a local middle school (2016)

Publications

- [1] *FlowRetrieval: Flow-Guided Data Retrieval for Few-Shot Imitation Learning*
Li-Heng Lin, **Yuchen Cui**, Amber Xie, Tianyu Hua, Dorsa Sadigh
Conference on Robot Learning (CoRL), Nov 2024.
- [2] *DROC: Distilling and Retrieving Generalizable Knowledge for Robot Manipulation via Language Corrections*
Lihan Zha, **Yuchen Cui**, Li-Heng Lin, Minae Kwon, Montserrat Gonzalez Arenas, Andy Zeng, Fei Xia, Dorsa Sadigh
International Conference on Robotics and Automation (ICRA), May 2024.
- [3] *Open X-Embodiment: Robotic Learning Datasets and RT-X Models*
Open X-Embodiment Collaboration, **Yuchen Cui** et al.
International Conference on Robotics and Automation (ICRA), May 2024.
- [4] *Data Quality in Imitation Learning.*
Suneel Belkhale, **Yuchen Cui**, Dorsa Sadigh.
Conference on Neural Information Processing Systems (NeurIPS), Dec 2023.
- [5] *Gesture-Informed Robot Assistance via Foundation Model*
Li-Heng Lin, **Yuchen Cui**, Yilun Hao, Fei Xia, Dorsa Sadigh.
Conference on Robot Learning (CoRL), Nov 2023.
- [6] *HYDRA: Hybrid Robot Actions for Imitation Learning.*
Suneel Belkhale, **Yuchen Cui**, Dorsa Sadigh. Conference on Robot Learning (CoRL), Nov 2023.
- [7] *Masked Imitation Learning: Discovering Environment-Invariant Modalities in Multimodal Demonstrations*
Yilun Hao*, Ruinan Wang*, Zhangjie Cao, Zihan Wang, **Yuchen Cui**, Dorsa Sadigh.
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Oct 2023.
- [8] “No, to the Right” – *Online Language Corrections for Robotic Manipulation via Shared Autonomy*
Yuchen Cui*, Sidd Karamcheti*, Raj Palleti, Nidhya Shivakumar, Percy Liang, Dorsa Sadigh.
ACM/IEEE International Conference on Human-Robot Interaction (HRI), Mar 2023.
- [9] *Can Foundation Models Perform Zero-Shot Task Specification For Robot Manipulation?*
Yuchen Cui, Scott Niekum, Abhinav Gupta, Vikash Kumar, Aravand Rajeswaran.
Learning for Dynamics & Control Conference (L4DC), Jun 2022.
- [10] *Understanding the Relationship between Interactions and Outcomes in Human-in-the-Loop Machine Learning.*
Yuchen Cui, Pallavi Koppol, Henny Admoni, Scott Niekum, Reid Simmons, Aaron Steinfeld, Tesca Fitzgerald.
The International Joint Conference on Artificial Intelligence (IJCAI), Montréal, Québec. Aug 2021.
- [11] *The EMPATHIC Framework for Task Learning from Implicit Human Feedback.*
Yuchen Cui*, Qiping Zhang*, Alessandro Allievi, Peter Stone, Scott Niekum, and W. Bradley Knox.
Conference on Robot Learning (CoRL), Nov 2020.

- [12] *Uncertainty-Aware Data Aggregation for Deep Imitation Learning*.
Yuchen Cui, David Isele, Scott Niekum and Kiko Fujimura.
IEEE International Conference on Robotics and Automation (ICRA), May 2019.
- [13] *Risk-Aware Active Inverse Reinforcement Learning*.
Yuchen Cui, Daniel Brown and Scott Niekum.
Conference on Robot Learning (CoRL), Oct 2018.
- [14] *Active Reward Learning from Critiques*.
Yuchen Cui and Scott Niekum.
IEEE International Conference on Robotics and Automation (ICRA), May 2018.
- [15] *Modeling Sensory-Motor Decisions in Natural Behavior*
Ruohan Zhang, S. Zhang, M. H. Tong, **Yuchen Cui**, C. A. Rothkopf, Dana H. Ballard and Mary M. Hayhoe.
PLOS Computational Biology, 2018.
- [16] *Indoor Follow Me Drone*
Wenguang Mao, Zaiwei Zhang, Lili Qiu, Jian He, **Yuchen Cui**, and Sun Yun.
International Conference on Mobile Systems, Applications, and Services (MobiSys), Jun 2017.
- [17] *Distilling and retrieving generalizable knowledge for robot manipulation via language corrections*.
Lihan Zha, **Yuchen Cui**, Li-Heng Lin, Minae Kwon, Montse G. Arenas, Andy Zeng, Fei Xia, and Dorsa Sadigh.
In 2nd Workshop on Language and Robot Learning: Language as Grounding, 2023.
- [18] *Shared Autonomy for Robotic Manipulation with Language Corrections*.
Sidd Karamcheti, Raj Palleti, **Yuchen Cui**, Percy Liang, Dorsa Sadigh.
Workshop on Learning with Natural Language Supervision ACL, May 2022.
- [19] *Aux-AIRL: End-to-End Self-Supervised Reward Learning for Extrapolating beyond Suboptimal Demonstrations*.
Yuchen Cui, Bo Liu, Akanksha Saran, Stephen Giguere, Peter Stone, and Scott Niekum.
ICML Workshop on Self-Supervised Learning for Reasoning and Perception, July 2021.
- [20] *Reaction Modeling for Deriving General Task Information from Implicit Human Feedback*.
Yuchen Cui, Qiping Zhang, Sahil Jain, Alessandro Allievi, Peter Stone, Scotte Niekum, and W. Bradley Knox.
HRI Workshop on Exploring Applications for Autonomous Non-Verbal Human-Robot Interactions, Mar 2021.
- [21] *Demonstration of the EMPATHIC Framework for Task Learning from Implicit Human Feedback*.
Yuchen Cui, Qiping Zhang, Sahil Jain, Alessandro Allievi, Peter Stone, Scotte Niekum, and W. Bradley Knox.
AAAI-21 Demonstrations Program, Feb 2021.
- [22] *Active learning from critiques via bayesian inverse reinforcement learning*.
Yuchen Cui and Scott Niekum.
RSS Workshop on Mathematical Models, Algorithms, and Human-Robot Interaction. Jul 2017.
- [23] *Trajectory-based visual analytics for anomalous human movement analysis using social media*.
Junghoon Chae, **Yuchen Cui**, Yun Jang, Guizhen Wang, Abish Malik, David S. Ebert.
EuroVis Workshop on Visual Analytics (EuroVA), May 2015.
- [24] *Dissertation: Efficient algorithms for low-effort human teaching of robots*
Yuchen Cui (Committee: Scott Niekum, Peter Stone, Dana Ballard, Dorsa Sadigh)
The University of Texas at Austin, Dec. 2021.