Yifeng Zhu

Ph.D. student, Computer Science Department
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EDUCATION

The University of Texas at Austin, Austin, TX, U.S.　　　　2019 - Now
Ph.D. student in Computer Science
Advisors: Prof. Yuke Zhu and Prof. Peter Stone

Carnegie Mellon University, Pittsburgh, PA, U.S.　　　　2017 - 2018
Visiting Student in Machine Learning Department
Advisor: Prof. Manuela Veloso

Zhejiang University, Hangzhou, Zhejiang, China　　　　2014 - 2018
Bachelor of Engineering in Automation & *Bachelor of Arts* in English
Advisor: Prof. Rong Xiong

EMPLOYMENT

Toyota Research Institute, Los Altos, CA, U.S.　　　　Jun 2022 — Aug 2022
Research Intern

NVIDIA Research, Redmond, WA, U.S.　　　　Jun 2020 — Aug 2020
Research Intern

Sony AI, Tokyo, Japan　　　　Apr 2019 — Aug 2019
Research Intern

Carnegie Mellon University, Pittsburgh, PA, U.S.　　　　Aug 2018 — Feb 2019
Research Associate

REFEREED PUBLICATIONS

[1] **Yifeng Zhu**, Zhenyu Jiang, Peter Stone, Yuke Zhu. Learning Generalizable Manipulation Policies with Object-Centric 3D Representations. *7th Annual Conference on Robot Learning* (**CoRL**), *2023.*

[2] Bo Liu*, **Yifeng Zhu***, Chongkai Gao*, Yihao Feng, Qiang Liu, Yuke Zhu, Peter Stone. LIBERO: LIBERO: Benchmarking Knowledge Transfer in Lifelong Robot Learning. *Under Review, 2023.*

[3] Xiaohan Zhang, Yifeng Zhu, Yan Ding, Yuqian Jiang, Yuke Zhu, Peter Stone, Shiqi Zhang. Symbolic State Space Optimization for Long Horizon Mobile Manipulation Planning. *International Conference on Intelligent Robots and Systems* (**IROS**). *2023.*

[4] **Yifeng Zhu**, Abhishek Joshi, Peter Stone, Yuke Zhu. VIOLA: Imitation Learning for Vision-Based Manipulation with Object Proposal Priors. *6th Annual Conference on Robot Learning* (**CoRL**), *2022.*

[5] **Yifeng Zhu**, Peter Stone, Yuke Zhu. Bottom-Up Skill Discovery from Unsegmented Demonstrations for Long-Horizon Robot Manipulation. *International Conference on Robotics and Automation* (**ICRA**), *2022.*

[6] **Yifeng Zhu**, Jonathan Tremblay, Stan Birchfield, Yuke Zhu. Hierarchical Planning for Long-Horizon Manipulation with Geometric and Symbolic Scene Graphs. *International Conference on Robotics and Automation* (**ICRA**), *2021.*

[7] Mingyo Seo, Ryan Gupta, **Yifeng Zhu**, Luis Sentis, Yuke Zhu. Learning to Walk by Steering: Perceptive Quadrupedal Locomotion in Dynamic Environments. *International Conference on Robotics and Automation* (**ICRA**), *2023.*

[8] Xiaohan Zhang, **Yifeng Zhu**, Yan Ding, Yuke Zhu, Peter Stone, Shiqi Zhang. Visually Grounded Task and Motion Planning for Mobile Manipulation. *International Conference on Robotics and Automation* (**ICRA**), *2022.*

[9] Zhenyu Jiang, **Yifeng Zhu**, Maxwell Svetlik, Kuan Fang, Yuke Zhu. Synergies Between Affordance and Geometry: 6-DoF Grasp Detection via Implicit Representations. *Robotics: Science and Systems* (**RSS**), *2021.*

[10] Guanya Shi, **Yifeng Zhu**, Jonathan Tremblay, Stan Birchfield, Fabio Ramos, AnimashreeAnandkumar, Yuke Zhu. Fast Uncertainty Quantification for Deep Object Pose Estimation. *International Conference on Robotics and Automation* (**ICRA**), *2021.*

[11] Suna Sihang Guo, Ruohan Zhang, Bo Liu, **Yifeng Zhu**, Dana Ballard, Mary Hayhoe, Peter Stone. Machine versus human attention in deep reinforcement learning tasks. *Advances in Neural Information Processing Systems (NeurIPS), 2021*

[12] **Yifeng Zhu**, Devin Schwab, Manuela Veloso. Learning Primitive Skills for Mobile Robots. *International Conference on Robotics and Automation* (**ICRA**), *2019.*

[13] Devin Schwab, **Yifeng Zhu**, Manuela Veloso. Reinforcement Learning with Tensor State and Action Spaces. *Neural Information Processing Systems Deep Reinforcement Learning Workshop, 2018.*

[14] Devin Schwab, **Yifeng Zhu**, Manuela Veloso. Learning Skills for Small Size League RoboCup. *RoboCup International Symposium 2018.* (**Oral & Nominated for Best Paper Award**)

[15] Devin Schwab, **Yifeng Zhu**, Manuela Veloso. Zero Shot Transfer Learning for Robot Soccer. Extended Abstract. *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems.*

[16] **Yifeng Zhu**, Yongsheng Zhao, Lisen Jin, Jun Wu, Rong Xiong. Towards High Level Skill Learning: Learn to Return Table Tennis Ball Using Monte-Carlo Based Policy Gradient Method. *IEEE International Conference on Real-time Computing and Robotics*, 2018. (**Oral & Nominated for Best Paper Award**)

TECHNICAL REPORTS

[1] Yuke Zhu, Josiah Wong, Ajay Mandlekar, Roberto Martín-Martín, Abhishek Joshi, Soroush Nasiriany, **Yifeng Zhu**. robosuite: A Modular Simulation Framework and Benchmark for Robot Learning. *arXiv:2009.12293.*

[2] Bo Liu, William Macke, Caroline Wang, **Yifeng Zhu**, Patrick MacAlpine, Peter Stone. UT Austin Villa: An Open-source Gym Environment for Deep Reinforcement Learning on 3DSim.

PATENTS

[1] Yuke Zhu, **Yifeng Zhu**, Stanley Thomas Birchfield, Jonathan Tremblay. Machine learning model for task and motion planning. *US Patent Application 17/082,972*, filed October 28, 2020

AWARDS & **HONORS**	**Awards and Prizes**

Awards and Prizes
- Silver Medal at RoboCup 2018 Small Size League   2018
- First Prize in National Olympiad of Chemistry in Jiangsu Province 2013
- First Prize in National Olympiad of Informatics in Jiangsu Province 2012

Scholarships
- Undergraduate Thesis Project Scholarship   2017
- Cross-disciplinary Scholars in Science and Technology Scholarship   2017

SERVICES

Conference Reviewer
- International Conference on Robotics and Automation (ICRA)
- Conference on Robot Learning (CoRL)
- International Conference on Intelligent Robots and Systems (IROS)

Journal Reviewer
- IEEE Robotics and Automation Letters (RA-L)
- Autonomous Robots

Workshop Organizer
- Texas Regional Robotics Symposium   2022

TALKS

LOTUS: Continual Imitation Learning for Robot Manipulation Through Unsupervised Skill Discovery

- Workshop – Towards Reliable and Deployable Learning-Based Robotic Systems, CoRL'23   Nov 2023

LIBERO: Benchmarking Knowledge Transfer in Lifelong Robot Learning

- Workshop – Towards Generalist Robots: Learning Paradigms for Scalable Skill Acquisition, CoRL'23   Nov 2023
- Workshop – Out-of-Distribution Generalization in Robotics: Towards Reliable Learning-Based Autonomy, CoRL'23   Nov 2023

Building Human-Like Learning Household Robots via Perceptual and Motor Abstractions

- Invited talk at Berkeley (Online)   Nov 2023
- Texas Robotics Symposium, Austin, US   Oct 2023
- RSS Pioneers, Daegu, Korea   Jul 2023

Building State and Action Abstractions for Long-Horizon Robot Manipulation

- Invited talk at Stanford (Online)   Oct 2021

Robot Manipulation with Geometric and Symbolic Scene Graphs

- Structural and Compositional Learning on 3D Data Workshop ICCV'21 (Online)   Oct 2021
- MatchLab at Imperial College London (Online)   Feb 2022

TEACHING	**Teaching Assistant, The University of Texas at Austin** CS 391R Robot Learning	Fall 2022
	Teaching Assistant, The University of Texas at Austin CS 343 Artificial Intelligence	Spring 2021
	Teaching Assitant, The University of Texas at Austin CS 391R Robot Learning	Fall 2020
	Teaching Assitant, The University of Texas at Austin CS 394R Reinforcement Learning	Fall 2019

Outreach	Organize the tour of Texas Robotics for LASA high school students. The University of Texas at Austin.	Oct 2023.
	Present an interactive robot demo on Girl's Day. The University of Texas at Austin.	May 2023.

Mentorship	The University of Texas at Austin	2019-Now

Undergraduate Student Mentor
- Abhishek Joshi, Computer Science.

Visiting Scholar Mentor
- Weikang Wan, Peking University.
- Chongkai Gao, Tsinghua University.

Press Coverage   [1] Video Friday Robotics by Evan Ackerman, IEEE Spectrum. Nov 11. 2022