

Yufei Wang

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🌐 <https://yufeiwang63.github.io>

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Education

- **Ph.D. in Robotics** PA, USA
Robotics Institute, School of Computer Science, Carnegie Mellon University Aug. 2021 – May. 2026 (Expected)
Advisor: Prof. Zackory Erickson and Prof. David Held
- **M.S. in Computer Science** PA, USA
Computer Science Department, School of Computer Science, Carnegie Mellon University Aug. 2019 – Dec. 2020
Advisor: Prof. David Held
- **B.S. in Data Science and Big Data Technology** Beijing, P.R. China
YuanPei College, Peking University Sept. 2015 – Jul. 2019
Advisor: Prof. Bin Dong

Work Experience

- **Research Intern** MA, USA
MIT-IBM Watson AI Lab May. 2023 – Sep. 2023
Advisor: Prof. Chuang Gan
- **Research Intern** Beijing, P.R. China
Microsoft Research Asia (MSRA) Jan. 2019 – May. 2019
Advisor: Qiwei Ye

Journal Publications (* † ‡ indicates equal contribution or equal advising)

- [j5] **Unfolding the Literature: A Review of Robotic Cloth Manipulation**
Alberta Longhini, **Yufei Wang**, Irene Garcia-Camacho, David Blanco-Mulero, Marco Moletta, Michael Welle, Guillem Alenyà, Hang Yin, Zackory Erickson, David Held, Júlia Borràs, Danica Kragic
Annual Review of Control, Robotics, and Autonomous Systems, 2024
- [j4] **Force-Constrained Visual Policy: Safe Robot-Assisted Dressing via Multi-Modal Sensing**
Zhanyi Sun*, **Yufei Wang***, David Held†, Zackory Erickson†
IEEE Robotics and Automation Letters (RA-L), 2024
- [j3] **Visual Haptic Reasoning: Estimating Contact Forces by Observing Deformable Object Interactions**
Yufei Wang, David Held, Zackory Erickson
IEEE Robotics and Automation Letters (RA-L) with presentation at IROS 2022
- [j2] **Learning to Scan: A Deep Reinforcement Learning Approach for Personalized Scanning in CT Imaging**
Ziju Shen*, **Yufei Wang***, Dufan Wu, Xu Yang, Bin Dong
Inverse Problems and Imaging, 2022
- [j1] **Learning to Discretize: Solving 1D Scalar Conservation Laws via Deep Reinforcement Learning**
Yufei Wang*, Ziju Shen*, Zichao Long, Bin Dong
Communications in Computational Physics, 2020

Conference Publications (* † ‡ indicates equal contribution or equal advising)

- [c20] **Multi-Modal Fine-Tuning for Robot-Assisted Dressing with Arm Motions**
Alexis Yihong Hao, **Yufei Wang**, Navin Sriram Ravie, Bharath Hegde, David Held†, Zackory Erickson†
Conference on Robot Learning (CoRL), 2025
- [c19] **Geometric Red-Teaming for Robotic Manipulation**
Divyam Goel, **Yufei Wang**, Tiancheng Wu, Helen Qiao, Pavel Piliptchak, David Held†, Zackory Erickson†
Conference on Robot Learning (CoRL), 2025, **Oral Presentation**
- [c18] **Articulate AnyMesh: Open-Vocabulary 3D Articulated Objects Modeling**
Xiaowen Qiu, Jincheng Yang, Yian Wang, Zhehuan Chen, **Yufei Wang**, Tsun-Hsuan Wang, Zhou Xian, Chuang Gan
Conference on Robot Learning (CoRL), 2025

- [c17] **Real-World Offline Reinforcement Learning from Vision Language Model Feedback**
Sreyas Venkataraman*, **Yufei Wang***, Ziyu Wang, Navin Sriram Ravie, Zackory Erickson[†], David Held[†]
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2025
- [c16] **ArticuBot: Learning Universal Articulated Object Manipulation Policy via Large Scale Simulation**
Yufei Wang*, Ziyu Wang*, Mino Nakura[†], Pratik Bhowal[†], Chia-Liang Kuo[†], Yi-Ting Chen, Zackory Erickson[‡], David Held[‡]
Robotics: Science and Systems (RSS), 2025
- [c15] **DiffTORI: Differentiable Trajectory Optimization for Deep Reinforcement and Imitation Learning**
Weikang Wan*, Ziyu Wang*, **Yufei Wang***, Zackory Erickson, David Held
Neural Information Processing Systems (NeurIPS), 2024, **Spotlight Presentation**
- [c14] **Architect: Generating Vivid and Interactive 3D Scenes with Hierarchical 2D Inpainting**
Yian Wang*, Xiaowen Qiu*, Jiageng Liu*, Zhehuan Chen, Jiting Cai, **Yufei Wang**, Tsun-Hsuan Wang, Zhou Xian, Chuang Gan
Neural Information Processing Systems (NeurIPS), 2024
- [c13] **RoboGen: Towards Unleashing Infinite Data for Automated Robot Learning via Generative Simulation**
Yufei Wang*, Zhou Xian*, Feng Chen*, Tsun-Hsuan Wang, Yian Wang, Katerina Fragkiadaki, Zackory Erickson, David Held, Chuang Gan
International Conference on Machine Learning (ICML), 2024
- [c12] **RL-VLM-F: Reinforcement Learning from Vision Language Foundation Model Feedback**
Yufei Wang*, Zhanyi Sun*, Jesse Zhang, Zhou Xian, Erdem Biyik, David Held[†], Zackory Erickson[†]
International Conference on Machine Learning (ICML), 2024
- [c11] **One Policy to Dress Them All: Learning to Dress People with Diverse Poses and Garments**
Yufei Wang, Zhanyi Sun, Zackory Erickson*, David Held*
Robotics: Science and Systems (RSS), 2023
- [c10] **Elastic Context: Encoding Elasticity for Data-driven Models of Textiles**
Alberta Longhini, Marco Moletta, Alfredo Reichlin, Michael C. Welle, Alexander Kravberg, **Yufei Wang**, David Held, Zackory Erickson, Danica Kragic
IEEE International Conference on Robotics and Automation (ICRA), 2023
- [c9] **ToolFlowNet: Robotic Manipulation with Tools via Predicting Tool Flow from Point Clouds**
Daniel Seita, **Yufei Wang**[†], Sarthak J. Shetty[†], Edward Yao Li[†], Zackory Erickson, David Held
Conference on Robot Learning (CoRL), 2022
- [c8] **Learning Visible Connectivity Dynamics for Cloth Smoothing**
Xingyu Lin*, **Yufei Wang***, Zixuan Huang, David Held (*order by dice)
Conference on Robot Learning (CoRL), 2021
- [c7] **FabricFlowNet: Bimanual Cloth Manipulation with a Flow-based Policy**
Thomas Weng, Sujay Man Bajracharya, **Yufei Wang**, Khush Agrawal, David Held
Conference on Robot Learning (CoRL), 2021
- [c6] **ROLL: Visual Self-Supervised Reinforcement Learning with Object Reasoning**
Yufei Wang*, Gautham Narayan*, Xingyu Lin, Brian Okorn, David Held
Conference on Robot Learning (CoRL), 2020
- [c5] **SoftGym: Benchmarking Deep Reinforcement Learning for Deformable Object Manipulation**
Xingyu Lin, **Yufei Wang**, Jake Olkin, David Held
Conference on Robot Learning (CoRL), 2020
- [c4] **f-IRL: Inverse Reinforcement Learning via State Marginal Matching**
Tianwei Ni*, Harshit Sikchi*, **Yufei Wang***, Tejus Gupta*, Lisa Lee[†], Ben Eysenbach[†] (*order by dice)
Conference on Robot Learning (CoRL), 2020
- [c3] **Deep Reinforcement Learning for Green Security Games with Real-Time Information**
Yufei Wang, Zheyuan Ryan Shi, Lantao Yu, Yi Wu, Rohit Singh, Lucas Joppa, Fei Fang
AAAI Conference on Artificial Intelligence (AAAI), 2019

- [c2] **Magic Cube Bloom Filter: Answering Membership Queries for Multiple Sets**
Zhouyi Sun, Siang Gao, Bingqing Liu, **Yufei Wang**, Tong Yang, Bin Cui
IEEE International Conference on Big Data and Smart Computing (BigComp), 2019
- [c1] **Diamond Sketch: Accurate Per-Flow Measurement for Real IP Streams**
Tong Yang, Siang Gao, Zhouyi Sun, **Yufei Wang**, Yulong Shen, Xiaoming Li
IEEE INFOCOM Poster/Demo (INFOCOM), 2018

Workshop Papers and Pre-prints (*[†] indicates equal contribution or equal advising)

- [w2] **Meta-SAC: Auto-tune the Entropy Temperature of Soft Actor-Critic via Metagradient**
Yufei Wang*, Tianwei Ni*
7th ICML Workshop on Automated Machine Learning, 2020
- [w1] **Beyond Exponentially Discounted Sum: Automatic Learning of Return Function**
Yufei Wang*, Qiwei Ye*, Tieyan Liu
NeurIPS Workshop on Deep Reinforcement Learning, 2020

Honors and Awards

- **SoftBank Group and Arm Fellowship** Sep. 2025
For outstanding PhD students doing excellent research at CMU
- **Uber Presidential Fellowship** Sep. 2022
For outstanding PhD students (4 out of 200) doing excellent research at CMU
- **Excellence Award, the Stars of Tomorrow Internship Program, Microsoft Research** July. 2019
For outstanding research performance during intern at Microsoft Research Asia
- **Excellent Undergraduate in Beijing** July. 2019
For outstanding undergraduate students (top 1%) in the city of Beijing in a comprehensive evaluation
- **Guanghua Scholarship** Oct. 2018
For students (12 out of 341 students in YuanPei College, PKU) of exceptional academic performance
- **Pacesetter of Merit Student of Peking University** Oct. 2018 & Oct. 2017 & Oct. 2016
For outstanding students (5 out of 341 students in YuanPei College, PKU) in a comprehensive evaluation

Invited Talks

- **Meta Embodied AI Seminar** Apr. 2024
Differentiable Trajectory Optimization for Deep Reinforcement and Imitation Learning
- **UT Austin SCALAR Lab** Apr. 2024
Scaling up Robot Learning via Automated Demonstration Generation in Simulation
- **Peking University, EPIC Lab** Dec. 2023
RoboGen: Towards Unleashing Infinite Data for Automated Robot Learning via Generative Simulation
- **Carnegie Mellon University, Robot Learning Workshop** Dec. 2023
Scaling up Robot Learning via Automated Demonstration Generation in Simulation
- **Beijing Academy of Artificial Intelligence** Nov. 2023
RoboGen: Towards Unleashing Infinite Data for Automated Robot Learning via Generative Simulation
- **Stanford University, ILIAD Lab** Apr. 2023
One Policy to Dress Them All: Learning to Dress People with Diverse Poses and Garments

Teaching Experience

- **TA for Introduction to Machine Learning** (Instructor: Prof. Matt Gormley) CMU, Spring 2020

- **TA for Learning for 3D Vision** (Instructor: Prof. Shubham Tulsiani) CMU, Spring 2023
- **TA for Introduction to Robot Learning** (Instructor: Prof. Guanya Shi) CMU, Fall 2024

Students Mentored

- **Zhanyi Sun**, CMU Master of Science in Robotics (MSR) → Stanford PhD Sep. 2022 – May 2024
- **Jacob Mdelgado-Lopez**, CMU RISS Scholar → JHU PhD May 2022 – Sep. 2022
- **Bharath Hegde**, BITS Pilani, Visiting Undergraduate at CMU → CMU MSR Feb. 2024 – Jun. 2024
- **Weikang Wan**, Peking University, Visiting Undergraduate at CMU → UCSD PhD Feb. 2023 – Aug. 2023
- **Feng Chen**, Tsinghua University, Visiting Undergraduate at MIT-IBM → HKU PhD May. 2023 – Sep. 2023
- **Ziyu Wang**, Tsinghua University, Visiting Undergraduate at CMU → Harvard PhD Feb. 2024 – present
- **Sreyas Venkataraman**, CMU RISS Scholar → CMU MSR May 2024 –present
- **Navin Sriram Ravie**, CMU RISS Scholar May 2024 –Nov. 2024
- **Chia-Liang Kuo**, National Yang Ming Chiao Tung University, Visiting Master's at CMU May 2024 – Aug. 2024
- **Mino Nakura-Fan**, CMU Master of Science in Robotics Aug. 2024 – present
- **Pratik Bhowal**, CMU Master of Science in Robotics Aug. 2024 – present
- **Yihong Alexis Hao**, Graduate Research Assistant Aug. 2024 – present
- **Divyam Goel**, CMU Master of Science in Robotics Aug. 2024 – present
- **Chenyuan Hu**, Tsinghua University, Visiting Undergraduate at CMU Mar. 2025 – present
- **Ajit Srikanth**, IIIT Hyderabad, Visiting Undergraduate at CMU June. 2025 – present
- **Kyutae Sim**, CMU Master of Science in Robotics April. 2025 – present

Academic Services

- **Reviewer for conferences:** RSS 2025, CoRL 2022-2025, ICRA 2024, IROS 2022-2024, NeurIPS Datasets and Benchmarks 2021-2022, NeurIPS 2024-2025, ICLR 2024-2025, ICML 2025, CVPR Workshop 2023, RSS Workshop 2024, ICRA Workshop 2021, 2025
- **Reviewer for journals:** IEEE RAL 2022-2025, IEEE T-ASE 2024, IEEE T-RO 2024-2025