Yiqi Wang

email: yiqiw2@andrew.cmu.edu | phone: 6089492194 | website: https://yiqiwang8177.github.io/

Education

Carnegie Mellon University (CMU) Pittsburgh, PA
Master of Science in Robotics, advised by Jeff Schneider, GPA: 4.08/4.3 2024 – Present
Master of Science in Electrical and Computer Engineering (Advanced), GPA: 3.8/4.0 2022 – 2024
Selected Coursework: Learning for manipulation, Deep reinforcement learning and control, Embodied AI and safety, Autonomous driving, Speech recognition and understanding, Computer vision, Deep learning.

University of Wisconsin, Madison (UW Madison) Madison, WI
Bachelor of Science in Computer Sciences, **distinction**, GPA: 3.9/4.0 2019 - 2022
Selected Coursework: Prob & info theory in ML, Matrix methods in ML, Big data systems, Operating systems, Algorithms.

Dalian Polytechnic University Dalian, China
Worked towards a Bachelor of Science in Automation, GPA: 3.6/4.0 2017 - 2019

Publications

1. **Wang, Yiqi**, Mrinal Verghese, and Jeff Schneider. "Latent Policy Steering with Embodiment-Agnostic Pretrained World Models." *arXiv preprint arXiv:2507.13340* (2025). In submission to ICRA 2026. [link].
2. Schultz, Lane E., **Yiqi Wang**, Ryan Jacobs, and Dane Morgan. "A general approach for determining applicability domain of machine learning models." npj Computational Materials 11, no. 1 (2025): 95. [link].
3. **Wang, Yiqi**, Laixi Shi, Martin Hyungwoo Lee, Jaroslaw Sydir, Zhu Zhou, Yuejie Chi, and Bin Li. "Scalable Dynamic Resource Allocation via Domain Randomized Reinforcement Learning." In GLOBECOM 2024-2024 IEEE Global Communications Conference, pp. 2635-2640. IEEE, 2024. [link].
4. **Wang, Yiqi**, Mengdi Xu, Laixi Shi, and Yuejie Chi. "A trajectory is worth three sentences: multimodal transformer for offline reinforcement learning." In Uncertainty in Artificial Intelligence, pp. 2226-2236. PMLR, 2023. [link].

Research Experience & Projects

CMU, Robotics Institute Pittsburgh, PA
Project lead, supervised by Prof. Jeff Schneider. Aug 2024 – Present

- Researched on sample-efficient robot learning by leveraging suboptimal data across multiple embodiments (existing public robot data and easily-collected actionless human data from play) via an embodiment-agnostic World Model (WM).
- Proposed optic flows as actions to pretrain WM agnostic to embodiment gaps between different robots and humans. Learned a value function robust to inference-time distribution shift to select the action plan during inference.
- Conducted real-world experiments with a Franka FR3 and collected demonstrations via a Dual Sense joystick.
- Improved the real-world robot success rate by 50% given 30 demonstrations, and 25% given 50 demonstrations, compared to a diffusion policy during inference, across tasks involving long-horizon pick-and-place, tool-use, and folding a towel.
- 1st author paper submission to ICRA 2026 [1].

Project lead, mentored by Mrinal Verghese and Prof. Chris G. Atkeson Jan 2023 – May 2024

- Leading a project on skill acquisition for robots by visually imitating human or robot demonstrations.
- Developed a novel histogram representation of video based on the token counts of the encoded optic flows via a VQ-VAE.
- Implemented a reward function by comparing the normalized histograms between robot episodes against demonstrations.
- Implemented Dreamer-v3 and reached 65% success rate on the open/close-fridge (RL bench) without ground-truth rewards.

CMU, Electrical and Computer Engineering Department Pittsburgh, PA
Graduate Research Assistant, supervised by Prof. Yuejie Chi. Aug 2022 – Aug 2023

- Researched on offline RL by exploiting the insight that offline trajectories are inherently multimodal sequences.
- Designed a multimodal transformer (Decision-Transducer, DTd), which hierarchically leveraged the interactions between modalities (states, actions, and rewards) to learn an effective representation for action predictions.
- Proposed model DTd became SOTA transformer on offline RL benchmark D4RL, which only required 50% gradient steps to reach the performance of prior works, and surpassed all prior transformers on average on 6 out of 9 cases of D4RL.
- 1st author paper accepted by UAI 2023 [4].

Skills & Languages & Certificates

- Languages: English, Mandarin, Cantonese
- Computer Language: Python, Java, C, LaTeX
- Simulation: Gymnasium, Robosuite, ManiSkill, RLBench
- Robots: Franka Research 3, Franka Emika Panda, Ufactory xArm 7
- Tools and Framework: Pytorch, Jax, SciPy, Git, Sklearn, OpenCV, Slurm, bash script