Wu, Qi

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EDUCATIONAL BACKGROUND

Stanford University Stanford, CA 09/2023 – present
- *M.S. in Mechanical Engineering* Overall GPA: 4.05/4.3

Tsinghua University Beijing, China 09/2019 – 07/2023
- *B.S. in Mechanical Engineering (Elite program)* Overall GPA: 3.80/4.0

PUBLICATION

- **Q. Wu,** Z. Fu, X. Cheng, X. Wang, and C. Finn, "Helpful DoggyBot: Open-World Object Fetching using Legged Robots and Vision-Language Models." *2025 IEEE International Conference on Robotics and Automation* (under review)
- Z. Fu*, Q. Zhao*, **Q. Wu***, G. Wetzstein, and C. Finn, "HumanPlus: Humanoid shadowing and imitation from humans." *2024 Conference on Robot Learning (**Outstanding Paper Award Finalist**)*
- **Q. Wu***, C. Zhang* and Y. Liu, "Custom Sine Waves Are Enough for Imitation Learning of Bipedal Gaits with Different Styles," *2022 IEEE International Conference on Mechatronics and Automation (ICMA)*, 2022, pp. 499-505, doi: 10.1109/ICMA54519.2022.9856382.

RESEARCH EXPERIENCES

Helpful DoggyBot: Open-World Object Fetching using Legged Robots and Vision-Language Models

Graduate research, Advisor: Prof. Chelsea Finn, Stanford University. *11/2023 – 09/2024*
- Used a front-mounted gripper for object manipulation with a third-person fisheye and an egocentric RGB camera
- Trained a low-level controller in simulation using egocentric depth for agile skills like climbing and tilting
- Used pre-trained vision-language models (VLMs) for semantic understanding and command generation.

HumanPlus: Humanoid shadowing and imitation from humans

Graduate research, Advisor: Prof. Chelsea Finn, Stanford University. *03/2024 – 06/2024*
- Trained a low-level policy in simulation via reinforcement learning using existing 40-hour human motion datasets.
- Sim-to-real transfer allows humanoid robots to follow real-time body and hand motion using only an RGB camera.
- Use teleoperation to collect whole-body data for learning different autonomous tasks through behavior cloning.

Custom Sine Waves Are Enough for Imitation Learning of Bipedal Gaits with Different Styles

Undergraduate research, Advisor: Prof. Li Liu, Dept. of Mechanical Engineering, Tsinghua University. *03/2022 – 05/2022*
- Applied deep reinforcement learning on the walking of the robot Cassie in simulation without complete references.
- Designed a reward that can encourage the robot to learn various gaits from simple sine wave references.
- Included in the Finalist of Toshio Fukuda Best Paper Award in Mechatronics (4/503) in *ICMA* 2022.

Hierarchical Control for Ostrich-like Robots Combining RL and Model-based Controller

Undergraduate research, Advisor: Prof. Ye Zhao, Georgia Institute of Technology. *06/2022 – 08/2022*
- Mounted a kinova-gen3 on robot Cassie mimicking an ostrich to explore bipedal loco-manipulation.
- Designed a hierarchical control with RL-based locomotion and model-based manipulation.
- Achieved a 'chicken-head effect,' stabilizing the end-effector's height within 1 cm.

PROJECT EXPERIENCES

Humanoid Robot for Soccer Game *01/2023 – 07/2023*

Student Humanoid Robotics Group, Group Leader.
- Led the Tsinghua MOS team to participate in RoboCup 2023 in France and won the **Fourth** place.
- Programmed the robot to automatically detect the ball, approach it and kick it towards the goal to win.
- Specifically managed the robot hardware system, robot dynamic walking controller and multi-robot high level policy.
- Responsible for leading a team of 15 people, coordinating tasks and planning overall strategies.

Chinese Space Station Robotic Arm Model for Science Exhibition *11/2021 – 10/2022*

Practice of Product Engineering Design Course Project, Group Leader.
- Designed and manufactured a model displaying how the arm can transport among adaptors on the station surface.
- Programmed controllers, designed printed circuit boards and designed mechanical models with FEM strength check.
- Exhibited at China Science and Technology Museum and covered by national major press.

PROFESSIONAL SKILLS

- Programming and Software: C++ / MATLAB / Python / ROS / SolidWorks / AutoCAD / ANSYS.
- Languages: TOEFL (108), GRE (V 156, Q 170, AW 4.0).