

Ziwen Zhuang

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Education

Ph.D in Computer Science and Technology

IIS, Tsinghua University
Beijing, China

SEP. 2024 - NOW

- Focusing on Athletic Intelligence and Deployable Robot Learning.

M.S. in Computer Science and Technology

ShanghaiTech University
Shanghai, China

SEP. 2021 - JULY 2024

- Major GPA: 3.8/4.0

B.E. in Computer Science and Technology

ShanghaiTech University
Shanghai, China

SEP. 2016 - JULY 2020

- Major GPA: 3.78/4.0
- Selected Courses: Artificial Intelligence Matrix Analysis (graduate)
Convex Optimization (graduate) Deep Learning (graduate)

UC Berkeley, Summer Session

UC Berkeley
California, U.S.A

JULY 2017 - AUG 2017

- GPA: 4.0/4.0

Publications

- [1] Ziwen Zhuang, Shenzhe Yao, and Hang Zhao. Humanoid parkour learning. In *8th Annual Conference on Robot Learning*, 2024. URL <https://openreview.net/forum?id=fs7ia3FqUM>.
- [2] Ziwen Zhuang*, Zipeng Fu*, Jianren Wang, Christopher G Atkeson, Sören Schwertfeger, Chelsea Finn, and Hang Zhao. Robot parkour learning. In *Conference on Robot Learning CoRL*, 2023.
- [3] Jianren Wang*, Ziwen Zhuang*, Yuyang Wang, and Hang Zhao. Adversarially robust imitation learning. In *5th Annual Conference on Robot Learning*, 2021. URL <https://openreview.net/forum?id=9aVCUv3nKBg>.
- [4] Jianren Wang*, Ziwen Zhuang*, and Hang Zhao. Semi: Self-supervised exploration via multisensory incongruity. *International Conference on Robotics and Automation*, 2022. URL <https://arxiv.org/abs/2009.12494>.
- [5] Ziwen Zhuang, Jianren Wang, and David Held. Tactile only Active Sensing using Reinforcement Learning. *RISS Working Papers Journal*, 7:209–214, 2019.

Projects

Humanoid Parkour Learning

Shanghai, China

RESEARCH ASSISTANT AT QIZHI INSTITUTE, SUPERVISED BY PROF. HANG ZHAO

Oct. 2023 - Aug. 2024

- The first RL-based method that trains a humanoid robot for highly dynamical locomotion task, without any motion prior.
- Trained single vision-based policy that can operate on a real humanoid robot with continuous parkour skills.
- Showed the robustness of humanoid whole-body control policy under out-of-distribution situation.
- Published on CoRL 2024

Robot Parkour Learning

Shanghai, China

RESEARCH ASSISTANT AT QIZHI INSTITUTE, SUPERVISED BY PROF. HANG ZHAO

Oct. 2022 - Nov. 2023

- Built a training system inspired by collocation that significantly improves the process of robot skill discovery.
- Demonstrated on real Unitree A1 quadruped robot.
- Best System Paper Finalist on CoRL 2023 (top 3)

RPA AI: AI-Powered Robotic Process Automation

RESEARCH ASSISTANT AT QIZHI INSTITUTE, SUPERVISED BY PROF. HANG ZHAO

Shanghai, China

May 2022 - Sep. 2022

- Built a training system that recognizes computer mouse in any GUI screen.
- Built autonomous data collecting system for training mouse detection task.
- Patents applied

Fully Autonomous Farming Robot

RESEARCH ASSISTANT AT SHANGHAITECH UNIVERSITY, WITH PROF. SÖREN SCHWERTFEGER

Shanghai, China

Aug. 2020 - Nov. 2021

- Hardware integration for farming robot with Husky Robot and Schunk Robot arm (LWA4p), Aubo Robot Arm (i3).
- Used FlexBE state machine and MoveIt! to integrate all the modules.
- Integrated fruit recognition, fruit localization and fruit picking solution.
- Successful field test in collecting mature fruits.

RoboMaster Competition

SHANGHAITECH ROBOMASTER TEAM, GROUP LEADER/PROJECT MANAGER

Shanghai, China

Oct. 2017 - Jul. 2019

- Developed the omnidirectional movement of the robot while the chassis spins, stabilizing the robots' gimbal.
- Designed and co-developed the code base as well as the programming interface for the DJI RoboMaster development board. for high-level control implementations. The users do not need to worry about the chip-level instructions.
- Organized the team of 35 students collaborating for 6 months, with 6 fully functional competition robots.

Experience

CONTRIBUTION TO ROBOT LEARNING COMMUNITY

CoRL 2022 reviewer; CoRL 2023 reviewer; AAAI 2023 reviewer; AAAI 2023 reviewer; IROS 2024 reviewer

POSITIONS

Research Assistant

SHANGHAI QIZHI INSTITUTE

Shanghai, China

Mar. 2021 - Present

Working on Deployable Robot Learning Algorithm with extreme agility under the supervision of Prof. Hang Zhao.

Research Assistant

STAR CENTER, SHANGHAITECH UNIVERSITY

Shanghai, China

Sep. 2021 - Jan. 2021

Working on fully autonomous farming robot under the supervision of Prof. Soeren Schwertfeger.

CREATIVE DESIGNS

ShanghaiTech Graduating Ceremony

May. 2020 - July. 2020

Designed and built 3D school logo as students' gift for ShanghaiTech University

TEACHING ASSISTANT

Robotics

Mar. 2023 - June 2023

Honors & Awards

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|-----------|--|-----------------|
| Dec. 2023 | Merit Student , ShanghaiTech University | Shanghai, China |
| Nov. 2019 | 2nd Prize , Midea Home Appliances Design Competition | Shanghai, China |
| Apr. 2018 | Honorable Mention , Mathematical Contest in Modeling | U.S.A |
| Nov. 2018 | Outstanding Student , ShanghaiTech University | Shanghai, China |
| May. 2019 | 2nd Place , RoboMaster Robotics Competition, Regional | China |
| May. 2018 | 3rd Place , RoboMaster Robotics Competition, Regional | China |
| Dec. 2017 | 3rd Prize , CUMCM (Contemporary Undergraduate Mathematical Contest in Modeling) | Shanghai, China |

Technical Skills

Programming Languages: Python, C/C++, Matlab

Tools: IsaacGym, PyTorch, PyBullet, Slurm, Solidworks, Tensorflow, Git, LaTeX, ROS, MoveIt, FlexBE, Linux, Keil, OpenCV, Rhinoceros, Shapr3D, Microsoft Project

Hardware: laser cutter, general 3D printer, STM32 Cortex-M development board, CNC machine, drilling machine