

Ziwen Zhuang

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Education

B.E. in Computer Science and Technology

ShanghaiTech University

SEP. 2016 - JULY 2020

Shanghai, China

• 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

JULY 2017 - AUG 2017

California, U.S.A

• GPA: 4.0/4.0

M.S. in Computer Science and Technology

ShanghaiTech University

SEP. 2021 - JULY 2024

Shanghai, China

• Major GPA: 3.8/4.0

Publications

- [1] 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.
- [2] 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>.
- [3] 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>.
- [4] Ziwen Zhuang, Jianren Wang, and David Held. Tactile only Active Sensing using Reinforcement Learning. *RISS Working Papers Journal*, 7:209–214, 2019.

Projects

Robot Parkour Learning

Shanghai, China

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

Sep. 2022 - Aug. 2023

- Collaboration with Stanford University and Carnegie Mellon University.
- Built a training system inspired by collocation that significantly improves the process of robot skill discovery.
- Built obstacle terrain and onboard middle-ware by myself to test the limit of the quadruped robot.
- Trained single vision-based policy that can operate on real quadruped robot with a continuous parkour skills.
- Significantly empower the quadruped robot to the terrain where wheel robots could never go through.
- Demonstrated on real Unitree A1 quadruped robot.
- Accepted as Oral at CoRL 2023

RPA AI: AI-Powered Robotic Process Automation

Shanghai, China

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

May 2022 - Sep. 2022

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

Adversarially Robust Imitation Learning

Shanghai, China

RESEARCH ASSISTANT AT QIZHI INSTITUTE, COLLABORATE WITH PROF. HANG ZHAO

Dec. 2020 - Jun. 2021

- Using adversarial network to disturb student policy so that the student could learn a more robust policy.
- Proposed and implemented adversarial imitation on both sensory attack and physical attack.
- Trained robust agent using adversarial attack, which out-perform 20% than OpenAI Baselines in Swimmer, HalfCheetah, Hopper, Ant.
- Published at CoRL 2021

Fully Autonomous Farming Robot

Shanghai, China

RESEARCH ASSISTANT AT SHANGHAITECH UNIVERSITY, WITH PROF. SÖREN SCHWERTFEGER

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.

Video Object Segmentation

Shanghai, China

BACHELOR THESIS, WITH PROF. XUMING HE

Jan. 2020 - July 2020

- Developed a code base to implement and compare Video Object Segmentation algorithms
- Reproduced STM network and achieved compatible result.
- Adopted improvement on Enhanced Space-Time Memory Network at 71.11% Jacard Index on DAVIS 2017 validation set, which trained only on image datasets.
- Built a generalizable code base to compare with various different methods.

RoboMaster Competition

Shanghai, China

SHANGHAITECH ROBOMASTER TEAM, GROUP LEADER/PROJECT MANAGER

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 a team of 35 students collaborating for 6 months, with 6 fully functional competition robots.

Experience

CONTRIBUTION TO ROBOT LEARNING COMMUNITY

CoRL 2023 reviewer; AAAI 2023 reviewer; CoRL 2022 reviewer; AAAI 2023 reviewer

POSITIONS

Research Assistant

Shanghai, China

SHANGHAI QIZHI INSTITUTE

Mar. 2021 - Present

Working on Self-supervised Robot Learning under the supervision of Prof. Hang Zhao.

Research Assistant

Shanghai, China

STAR CENTER, SHANGHAITECH UNIVERSITY

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

Robotics

Mar. 2023 - June 2023

Linear Algebra

Sep. 2019 - Jan. 2020

Honors & Awards

Nov. 2019	2nd Prize , Midea Home Appliances Degin 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