

ZHUOQUN CHEN 陈卓群

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EDUCATION

Duke University

Ph.D in Electrical and Computer Engineering

Durham, NC, USA

Aug. 2025 - Present

University of California, San Diego

M.S. in Electrical and Computer Engineering, Robotics

La Jolla, CA, USA

Sept. 2022 - Jun. 2024

Zhengzhou University

B.E. in Electrical Engineering; GPA: 3.81/4.0 (Rank: 1/98)

Zhengzhou, China

Sept. 2017 - Jul. 2021

PUBLICATIONS

- Responsive Noise-Relaying Diffusion Policy: Responsive and Efficient Visuomotor Control TMLR 2025
Zhuoqun Chen*, Xiu Yuan*, Tongzhou Mu, Hao Su
GenBot@ICLR2025
[\[Project\]](#) [\[arXiv\]](#)
- Generalized Animal Imitator: Agile Locomotion with Versatile Motion Prior CoRL 2024
Ruihan Yang*, **Zhuoqun Chen***, Jianhan Ma*, Chongyi Zheng*, Yiyu Chen, Quan Nguyen, Xiaolong Wang
Best Workshop Paper, Deployable@CoRL2023
[\[Project\]](#) [\[arXiv\]](#)
- iKap: Kinematics-aware Planning with Imperative Learning ICRA 2025
Qihang Li, **Zhuoqun Chen**, Haoze Zheng, Haonan He, Shaoshu Su, Junyi Geng, Chen Wang
[\[Project\]](#) [\[arXiv\]](#)
- AirRoom: Objects Matter in Room Reidentification CVPR 2025
Runmao Yao, Yi Du, **Zhuoqun Chen**, Haoze Zheng, Chen Wang
[\[Project\]](#) [\[arXiv\]](#)
- VL-Nav: Real-time Vision-Language Navigation with Spatial Reasoning Under Review
Yi Du, Taimeng Fu, **Zhuoqun Chen**, Bowen Li Shaoshu Su, Zhipeng Zhao, Chen Wang
[\[Project\]](#) [\[arXiv\]](#)

RESEARCH EXPERIENCE

Legged & Wheeled Robots Navigation with Vision and Language

Aug. 2024 - May 2025

Spatial AI & Robotics Lab (SAIR), UB

Advisor: Chen Wang

- Assisted research proposal of [Samsung 2025 START Program: Robotic Foundation Models](#)
- Implemented a nonlinear MPC module to train navigation policies & tracked reference trajectories for deployment
- Integrated AirVO for building sparse feature map for the testing of proposed vision-to-planning system in real-world
- Helped develop a comprehensive room reidentification dataset collected from several large indoor datasets
- Helped deploy a mobile robot for navigation experiments

Responsive Noise-Relaying Diffusion Policy for Dynamic Manipulation

May. 2024 - Aug 2024

Su Lab, UC San Diego (Mentor: Tongzhou Mu)

Advisor: Hao Su

- Proposed and implemented a novel training and inference method enabling sequential rollout of the Diffusion Policy
- Designed a tennis ball throwing task using Jaco Arm in MuJoCo for collecting dynamic and responsive demonstrations

Reinforcement Learning for Diverse Agile Skills of Legged Robot

Nov. 2022 - May 2024

Wang Lab, UC San Diego (Mentor: Ruihan Yang)

Advisor: Xiaolong Wang

- Trained an imitation learning control policy on a legged robot under the multi-task RL settings and developed a multi-processing interface to separate the control loop and policy command loop for robust teleoperation switching
- Tuned motor PD parameters in IsaacGym that have the smallest Sim2Real transfer gap in the real world settings

- Analyzed the clustering of latent skill space embeddings via t-SNE algorithm, rendered the reference trajectories in MoCap data of quadrupeds in Blender and deployed proposed algorithm onto a quadruped robot

Motion Planning and Visual SLAM

Nov. 2021 - May 2022

Bandwidth Wireless & AI LAB (BWAJ), Tongji University

Advisor: Junyuan Wang

- Explored Visual (Object SLAM and Dynamic SLAM) & Lidar (A-LOAM) SLAM algorithms
- Compared the different characteristics of sampling-based and graph-search based motion planning algorithms

INDUSTRY EXPERIENCE

Horizon Robotics

Sept. 2021 - Feb. 2022

Software Engineering Intern

Mentor: Xiangnan Xie

- Developing GUI Application for interactive camera profile configuration in Autonomous Driving
- Learning MIPI communication protocol and syncing of hard-triggered multi-camera streams

SELECTED PROJECTS

Trajectory Tracking via Receding-horizon Control and Policy Iteration

Jun. 2023

- Solved a periodic 2D tracking problem by reformulating it into a MPC problem by fixing the Guassian noise
- Solved the same problem with Policy Iteration by discretizing state space and control space in a tabular way

Generalist-Specialist Learning

Mar. 2023

- Trained a generalist policy across groups of task variations using Soft Actor-Critic, initialized the specialist policy on fewer variations with such weights, and continued to fine-tune the generalist policy with few specialist demos via GAIL

Particle Filter SLAM on Differential-drive Robot with Multiple Sensors

Jan. 2023

- Implemented Particle Filter SLAM with IMU odometry, 2D Lidar scans, wheel encoder, and RGBD images
- Built and colorized a 2D probabilistic occupancy grid map with estimated poses; calibrated sensor data published at different frequency

HONORS & AWARDS

- Best Workshop Paper @ CoRL 2023 Deployable Workshop *Nov. 2024*
- ECE SRIP 2023 Program Scholarship *Aug. 2023*
- China National Scholarship (**Top 1%**) *Nov. 2020*
- MICCAI 2019 Undergraduate Student Travel Award *Oct. 2019*
- University Academic Scholarships *2017 - 2022*

PROFESSIONAL SERVICE

- Conference Reviewer for CVPR 2025; ICRA 2024, 2025

TECHNICAL SKILLS

- **Frameworks:** PyTorch, IsaacGym, Sapien, Blender, Qt, ROS1/ROS2
- **Development Tools:** Git, Kubernetes, Docker, CMake, Bash
- **Programming:** Python, C/C++, MATLAB, L^AT_EX, Web
- **Libraries:** JAX, Eigen3, CasADi, OpenCV, PCL
- **Robots:** Unitree A1/B1/GO2