Chengwei Zhang

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RESEARCH INTERESTS

Active SLAM, 3D Reconstruction, Reinforcement Learning, Deep Learning

EDUCATION

Peking University, Beijing, China — Sept 2021 - Present
Bachelor of Science in Robotics and Mechanics (Dual-degree)
Cumulative GPA: 3.79/4.00 Rank: 2/21
Expected Graduation: June 2025

AWARDS

- Boeing Scholarship (Third Prize), College of Engineering, Peking University — 2022
- Merit Student of Peking University — 2023
- China Optics Valley Scholarship — 2023

RESEARCH EXPERIENCE

Research on Methods of Active SLAM and Exploration in Interactive Environments
Chang Liu's group, Autonomous Robots Lab, Peking University, China — July 2023

- Gained proficiency in Visual SLAM and active SLAM algorithms and conducted V-SLAM experiments like VINS-MONO on real robots.
- Developed a hierarchical active SLAM structure utilizing reinforcement learning and imperative learning methods.
- Designed a multi-resolution map encoder and a terrain-and-semantic-based local planner.
- (Future Work) Focus on interactive exploration and deployment on quadruped robots.

Soft Robotics Motion Control and Reinforcement Learning
Ke Liu's group, Peking University, China — April 2024

- Modeled soft robots in the Mujoco environment.
- Studied reinforcement learning principles.
- Working on reinforcement learning implementation of soft robotics using the SAC algorithm.

3D Gaussian Splatting for Dynamic Scene Reconstruction and Dynamic-Static Decomposition (To be submitted to CVPR2025)
(In collaboration with second-year PhD student Chengsheng Peng)
Masayoshi Tomizuka's group, Mechanical Systems Control Lab, UC Berkeley, the U.S. — July 2024

- Designed a two-stage 3DGS architecture for autonomous driving scene reconstruction.
- Developed a dynamic model using dinov2 features for dynamic-static decomposition.
- Worked extensively on visualization of surface reconstruction, 3DGS ellipsoids, and point cloud.

LANGUAGE PROFICIENCY

TOEFL iBT: 107/120
Listening: 27 — Reading: 28 — Speaking: 26 — Writing: 26

Publications

Currently no publications.

SKILLS

- **Programming Languages:** C, C++, Python, Shell, MATLAB
- **Software and Tools:** Linux, PyTorch, ROS, LaTeX, Gazebo, Mujoco, SolidWorks