Zhifeng Gu

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Education

The Hong Kong Polytechnic University, Hong Kong — Sep 2023 – Present

- Doctor of Philosophy, Advised by Prof. Bing Wang
- **Research Interests:** Embodied Agents, Spatial Intelligence, World Models

Beihang University, Beijing, China — Sep 2019 – Jun 2023

- Bachelor of Software Engineering, Advised by Prof. Lu Sheng — **GPA:** 3.8/4.0

Internships

XPENG Robotics, Shenzhen, China — Apr 2026 – Present

- **Research Direction:** Recursive Self-Improvement in Embodied Intelligence

Publications

R^3L: Reasoning 3D Layouts from Relative Spatial Relations

Zhifeng Gu*, Yuqi Wang*, Bing Wang

ICML 2026

MMOne: Representing Multiple Modalities in One Scene

Zhifeng Gu, Bing Wang

ICCV 2025

Research Experience

Spatial Reasoning for 3D Layout Generation — Jul 2025 – Jan 2026

SPACE Group, HK PolyU, Advised by Prof. Bing Wang

- Present a general framework for 3D layout generation, featuring invariant spatial decomposition and consistent spatial imagination to improve the reliability and consistency of multi-hop relative spatial reasoning.

Multimodal Scene Representation — Sep 2024 – Mar 2025

SPACE Group, HK PolyU, Advised by Prof. Bing Wang

- Propose a general framework for representing multiple modalities in one scene, with a modality modeling module and a multimodal decomposition mechanism to address modality conflicts.

6D Object Pose Estimation and Tracking — Jun 2022 – Jun 2023

VCG Lab, Beihang University, Advised by Prof. Lu Sheng

- Study 6D object pose tracking in human-object interaction scenes, where hand occlusion poses great challenges.
- Develop a motion-centric framework that explicitly models object motion across successive frames and refines pose estimation through shape completion and attention-based temporal integration.

Selected Honors and Awards

- Outstanding Graduate of Beihang University

Selected Skills

Python, PyTorch, C/C++, CUDA, Blender, etc.