Ziye Wang

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Research interest: Robotic Manipulation, Embodied AI, 3D World Model

EDUCATION

The University of Hong Kong **Jul. 2025 – Present**

Ph.D. in The HKU Musketeers Foundation Institute of Data Science (IDS)

Harbin Institute of Technology (Shenzhen) **Sep. 2021 – Jan. 2024**

Master in Computer Science and Technology

Harbin Institute of Technology (Shenzhen) **Sep. 2017 – Jun. 2021**

Bachelor in Computer Science and Technology

PUBLICATION

Ziye Wang, et al. GauDP: Reinventing Multi-Agent Collaboration through Gaussian-Image Synergy in Diffusion Policies. The Conference on Neural Information Processing Systems (NeurIPS), 2025.

- A 3D-2D synergistic framework that recover a shared 3D Gaussian field from multi-agent RGB observations to enable scalable, perception-aware imitation learning for collaborative robotic manipulation.

Ziye Wang, et al. High-Dynamic Radar Sequence Prediction for Weather Nowcasting Using Spatiotemporal Coherent Gaussian Representation. The International Conference on Learning Representations (ICLR), 2025. **(Oral)**

- A pre-research for 3D world model: re-represent high-dynamic 3D radar sequence as spatiotemporal coherent and predictable 3D Gaussians for practicable 3D prediction

Ziye Wang, et al. Multiscale and Multilevel Feature Fusion Network for Quantitative Precipitation Estimation With Passive Microwave. IEEE Transactions on Geoscience and Remote Sensing, vol. 62, pp. 1-16, 2024

- A CNN and ViT hybrid architecture to model the complex relationship between satellite observations and the precipitation process

RESEARCH EXPERIENCE

Native Memory Compression for Long-Horizon Manipulation 2025 – 2026

- Developed *NativeMEM*, a memory-augmented VLA framework that enables pretrained single-frame VLAs to solve memory-dependent manipulation tasks by conditioning on long-horizon visual histories
- Proposed *Native Memory Compression*, which repurposes the VLA's native vision encoder to compress each historical frame into a single visual memory token, supporting minute-level fine-grained histories
- Designed a two-stage training pipeline: first learning an action-supervised memory tokenizer aligned with the pretrained VLA's priors, then performing task-specific full VLA finetuning with limited demonstrations
- Achieved strong performance in both simulation and real-world tasks, targeting to CoRL 2026

Spatiotemporal Coherent Gaussian Representation for 3D Sequence Prediction 2024

- Develop the first practicable framework for high-resolution and high-dynamic 3D sequence reconstruction and prediction
- Re-represent high-dynamic 3D radar sequence as spatiotemporal coherent and predictable Gaussian groups, utilizing our proposed bidirectional Gaussian reconstruction pipeline with local motion and global trend constrains
- Integrates a memory mechanism into the Mamba framework, enabling our proposed GauMamba to learn the temporal evolution of Gaussian groups while efficiently handling a large volume of Gaussian tokens
- Reprogram the CUDA kernel for Radar Gaussian Splatting using CUDA C++

Satellite-Based Precipitation Estimation Model 2022 – 2023

- Develop a Multi-Scale and Multi-Level Feature Fusion Network (MSMLNet) for quantitative precipitation estimation based on passive microwave observations
- Design a hybrid architecture integrating CNN and ViT to model the complex relationship between microwave observations and precipitation process
- Propose a multi-level sub-module to adaptively distinguish precipitation levels and extract features independently addressing the issues caused by the skew distribution of precipitation

PROFESSIONAL EXPERIENCE

The Chinese University of Hong Kong, Shenzhen Apr. 2024 – Jan. 2025

Research Assistant
Supervisor Ruimao Zhang

Academic Activity

Academic Service

- Reviewer for CVPR 2026, RSS 2026, CoRL 2025 2026, and ACM TOMM

Workshop and Challenge Organizer

- Organizer of the Multi-Agent Robotic System (MARS) 2025 Challenge on SpaVLE @ NeurIPS 2025

HONORS & AWARDS

First Prize of China Undergraduate Mathematical Contest in Modeling 2019
First Prize Scholarship, Second Prize Scholarship 2019 – 2022

LEADERSHIP EXPERIENCE

Student Union Oct 2020 – Oct 2021

President Harbin Institute of Technology (Shenzhen)