

# PENGHAO WANG

13162808180 | wangph12025@shanghaitech.edu.cn | [authoritywang.github.io](https://authoritywang.github.io) | 2004 / 1 / 10

## INTRODUCTION

I'm a first-year Ph.D. student at ShanghaiTech University starting in 2025, supervised by Prof. Jiayuan Gu. I earned my bachelor's degree at ShanghaiTech University, where I was advised by Prof. Jingyi Yu and Prof. Lan Xu at the ShanghaiTech VRVC Lab. My research interests lie in 3D vision and embodied AI, including 3D generation and multimodal LLM. I am passionate about exploring novel ideas and implementing them.

## EDUCATION

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| <b>ShanghaiTech University</b><br>Bachelor's degree, Major in Computer Science and Technology<br>GPA 3.56/4.0    | <i>2021-2025</i>    |
| <b>ShanghaiTech University</b><br>Ph.D candidate, Major in Computer Science and Technology<br>Advisor Jiayuan Gu | <i>2025-Present</i> |

## PUBLICATIONS

- **ArtLLM: Generating Articulated Assets via 3D LLM**  
**Penghao Wang**, Siyuan Xie, Hongyu Yan, Xianghui Yang, Jingwei Huang, Chunchao Guo, Jiayuan Gu  
**Under Review at CVPR2026**
- **Hunyuan3D-Omni: A Unified Framework for Controllable Generation of 3D Assets**  
Team Hunyuan3D **Penghao Wang** is a core contributor  
**Technical Report [Arxiv Paper]**
- **PartNeXt: A Next-Generation Dataset for Fine-Grained and Hierarchical 3D Part Understanding**  
**Penghao Wang**, Yiyang He, Xin Lv, Yukai Zhou, Lan Xu, Jingyi Yu, Jiayuan Gu  
**Neurips DB Track 2025 [Paper]**
- **V<sup>3</sup>: Viewing Volumetric Videos on Mobiles via Streamable 2D Dynamic Gaussians**  
**Penghao Wang**, Zhirui Zhang, Liao Wang, Kaixin Yao, Siyuan Xie, Jingyi Yu, Minye Wu, Lan Xu  
**SIGGRAPH Asia 2024 (TOG)[Arxiv Paper]**
- **HiFi4G: High-Fidelity Human Performance Rendering via Compact Gaussian Splatting.**  
Yuheng Jiang, Zhehao Shen, **Penghao Wang**, Zhuo Su, Yu Hong, Yingliang Zhang, Jingyi Yu, Lan Xu.  
**CVPR2024 [Arxiv Paper]**
- **NEPHELE: A Neural Platform for Highly Realistic Cloud Radiance Rendering.**  
Haimin Luo, Siyuan Zhang, Fuqiang Zhao, Haotian Jing, **Penghao Wang**, Zhenxiao Yu, Dongxue Yan, Junran Ding, Boyuan Zhang, Qiang Hu, Shu Yin, Lan Xu, Jingyi Yu.  
**[Arxiv Paper]**

## EXPERIENCE

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- Tencent Hunyuan3D**, Research Intern - Shenzhen 2025.7 - Present
- **Controllable 3D Generation:** Introducing control modalities, including point, voxel, bone, and bounding box to 3D generation model, enhancing controllability.
  - **Articulation Object Generation:** Training a large-scale articulation generation model to enable flexible articulation object generation from a single image.
- ShanghaiTech SEA Lab**, Ph.D Student - Shanghai 2024.12 - Present
- **Part Level Understanding Research:** Developed a large-scale 3D part dataset and pioneered part-level generation methods, aiming to build a scalable simulation platform for embodied AI.
  - **Infrastructure Engineer:** Built and maintained the lab's high-performance GPU cluster.
- ShanghaiTech VRVC Lab**, Student Researcher - Shanghai 2022.8 - 2024.12
- **NeRF and 3DGS Research:** Replicate and optimize the NeRF and 3DGS related algorithms.
  - **Digital Human Reconstruction:** Extend the 3DGS to dynamic human scenes, enabling high-fidelity and streamable representation of digital humans.
- NeuDim Digital**, Research Intern - Shanghai 2022.8 - 2024.12
- **Algorithm Research:** Optimizing NeRF and 3DGS algorithm for multi-GPU servers, and developed an efficient scheduling system.
  - **Backend Develop:** Lead the development of the backend for the radiance field-based NeuRecon platform.

## AWARDS

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| Shanghaitech University Outstanding Graduate                                  | 2025.06 |
| Shanghaitech University Merit Student 2024                                    | 2024.12 |
| Shanghaitech University Merit Student 2022                                    | 2022.12 |
| National College Students Robot Contest National 3rd Prize                    | 2022.08 |
| Robomaster Super Tournament Regional Competition (Eastern Division) 2nd Prize | 2022.06 |
| Robomaster Intramural Competition Champion                                    | 2021.12 |

## TECHNICAL SKILLS

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|------------------------------|-----------------------------------|
| <b>Programming Languages</b> | Python, C, C++, CUDA, JavaScript  |
| <b>Computer Graphics</b>     | OpenGL, Vulkan                    |
| <b>Machine Learning</b>      | PyTorch, JAX                      |
| <b>Backend</b>               | Flask, Docker, Kubernetes, SQL    |
| <b>Frontend</b>              | Vue, BabylonJS                    |
| <b>Others</b>                | LATEX, Markdown, Git, Make, CMake |