




WENZHENG CHANG

Ph.D. Student in CS at SJTU | [amberheart.github.io](https://github.com/amberheart)

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Research Interests

World models, video generation, 3D/4D vision, geometric representation learning, and multi-modal large models training.

Education

Shanghai Jiao Tong University (SJTU)

Ph.D. in Computer Science (Advised by Prof. Tong He)

Sep. 2025 – Present

Shanghai, China

University of Science and Technology of China (USTC)

B.Eng. in Computer Science and Technology

Sep. 2021 – Jun. 2025

Hefei, China

– **GPA:** 3.88/4.3 (Weighted Average: 90.32, **Rank:** 8/192)

– **Honors:** Outstanding Graduate of the School of CS, National Scholarship (Top 1%)

– **Thesis:** "A Unified Geometry-Aware World Model" (Outstanding Undergraduate Thesis Award)

Publications (* indicates equal contribution)

Aether: Geometric-aware unified world modeling | *ICCV 2025 (Outstanding Paper @ RIWM Workshop)*

H. Zhu*, Y. Wang*, J. Zhou*, **W. Chang***, Y. Zhou*, Z. Li*, J. Chen*, C. Shen, J. Pang, T. He.

π^3 : Scalable Permutation-Equivariant Visual Geometry Learning | *ICLR 2026*

Y. Wang*, J. Zhou*, H. Zhu, **W. Chang**, Y. Zhou, Z. Li, J. Chen, J. Pang, C. Shen, T. He. [**1.7k+** *GitHub Stars*]

Omniworld: A multi-domain and multi-modal dataset for 4d world modeling | *ICLR 2026*

Y. Zhou, Y. Wang, J. Zhou, **W. Chang**, H. Guo, Z. Li, K. Ma, X. Li, Y. Wang, H. Zhu, M. Liu, et al. [**200k+** *HF Downloads*]

Wint3r: Window-based streaming reconstruction with camera token pool | *ICLR 2026*

Z. Li, J. Zhou, Y. Wang, H. Guo, **W. Chang**, Y. Zhou, H. Zhu, J. Chen, C. Shen, T. He.

Deepverse: 4d autoregressive video generation as a world model | *Preprint, 2025*

J. Chen, H. Zhu, X. He, Y. Wang*, J. Zhou*, **W. Chang***, Y. Zhou*, Z. Li*, Z. Fu, J. Pang, T. He.

Research Experience

Shanghai AI Lab

Research Intern, Spatial Representation & Video Generation

Nov. 2024 – Present

Shanghai, China

- **Large-Scale Distributed Training:** Set up and ran multi-node distributed training pipelines on up to **64 GPUs** for SOTA open-source video generation models like **CogVideoX (5B)**, **Wan2.1**, and **HunyuanVideo (8B)**.
- **4D World Models:** Focused on training, distilling, and evaluating 4D world models, dealing with high-dimensional video tensors to scale up spatial-temporal representations effectively.
- **Data Infrastructure:** Built robust data pipelines to process and manage **100TB+** of synthetic spatial data (**18M+** frames), covering multiple modalities like RGB, depth, camera poses, text, and optical flow.

Graphics and Geometric Computing Laboratory (GCL), USTC

Undergraduate Research Assistant (Supervised by Prof. Ligang Liu)

Jan. 2024 – Jun. 2024

Hefei, China

- Explored and optimized 3D reconstruction methods for transparent objects by applying advanced physically-based path tracing algorithms.

Teaching Experience

Teaching Assistant, University of Science and Technology of China

Computer Networks (*Fall 2024*), Computer Organization and Design (*Spring 2024*), Intro to Computer Systems A (*Fall 2023*)

Sep. 2023 – Jan. 2025

Selected Engineering Projects

LoongArch 32-bit Pipelined CPU Design | *Verilog, FPGA, Computer Architecture* **Aug. 2023**

- **Team Leader:** Built a complete LoongArch-32 pipelined CPU from scratch, handling everything from hardware description to datapath optimization and hazard resolution.
- Took the project through the full engineering lifecycle—from ISA design to FPGA hardware validation—leading a 4-person team to win the **Winning Prize** at the 7th "Loongson Cup" National Finals.

Distributed File Management & High-Performance Network I/O | *eBPF, C/C++, OS* **Jun. 2024**

- **Team Leader:** Developed an advanced distributed file system and network I/O module using eBPF to intercept and accelerate kernel-level network packets.
- Designed the overall system architecture and optimized kernel-space data paths, significantly boosting concurrent processing and I/O throughput.

USTCube (Digital Campus Metaverse) | *Minecraft, Digital Art* **Jan. 2023 – Jun. 2024**

- **Founder & Leader:** Led the digital reconstruction of the USTC campus in Minecraft; partnered with the Alumni Foundation, won multiple provincial-level digital art awards.

Honors & Awards

National Scholarship (Top 1%, Rank 2/186), *Ministry of Education of the PRC* Sep. 2023

Outstanding Graduate & Outstanding Undergraduate Thesis, *School of CS, USTC* Jun. 2025

Winning Prize, *7th "Loongson Cup" National College Student Computer System Training Competition* Aug. 2023

Silver Award for Outstanding Student Scholarship, *USTC* Sep. 2024 & 2021

Longfor Scholarship, *USTC* Sep. 2022

Technical Skills

Languages: Python, C/C++, Verilog, MATLAB, HLSL

Deep Learning: PyTorch, CUDA, Transformers, Diffusers, Hugging Face

Distributed Training & Infra: SLURM, NCCL, DeepSpeed, Docker

AI-Assisted Engineering: Highly proficient with modern coding agents (**Cursor, Claude Code, Gemini CLI, Codex**), using them to significantly speed up system prototyping, complex debugging, and codebase refactoring.