

JIN-CHUAN SHI

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RESEARCH INTERESTS

My research lies at the intersection of 3D reconstruction, dexterous manipulation, and large-scale machine learning. I work on reconstructing hand-object interaction from in-the-wild video and retargeting it into physically consistent simulation, turning Internet-scale human videos into robot-usable manipulation data for general-purpose dexterous manipulation.

Core research questions: (1) How can we build scalable, efficient, and robust reconstruction-and-retargeting systems that turn massive Internet videos into high-quality manipulation data? (2) On top of such data, how can we build scalable robot learning systems that unify perception and dexterous manipulation, enabling reliable general-purpose robots in unstructured, real-world environments?

EDUCATION

Zhejiang University

Ph.D. in Computer Science and Technology

Hangzhou, China

Sept. 2025 – Mar. 2029 (expected)

- Advisors: Prof. Chunhua Shen, Prof. Hao Chen

Beihang University

M.Eng. in Computer Science and Technology

Beijing, China

Sept. 2022 – Jan. 2025

- GPA: 3.80/4.00 · Average Score: 90.3/100
- Advisors: Prof. Shi-Min Hu (Tsinghua University), Prof. Miao Wang

Beihang University

B.Eng. in Computer Science and Technology, Shen Yuan Honors College

Beijing, China

Sept. 2018 – June 2022

- GPA: 3.73/4.00 · Average Score: 90.6/100
- Advisor: Prof. Miao Wang

PUBLICATIONS

* Equal contribution. Author of this CV in **bold**.

1. (**SIGGRAPH 2026**) *AGILE: Hand-Object Interaction Reconstruction from Video via Agentic Generation*. **Jin-Chuan Shi**^{*}, Binhong Ye^{*}, Tao Liu, Xiaoyang Liu, Yangjinhui Xu, Junzhe He, Zeju Li, Hao Chen, Chunhua Shen. [[Paper](#)] [[Project](#)] [[Code](#)]
2. (**CVPR 2024 / TPAMI 2025**) *LEGaussians: Language Embedded 3D Gaussians for Open-Vocabulary Scene Understanding*. **Jin-Chuan Shi**, Miao Wang, Hao-Bin Duan, Shao-Hua Guan. [[Paper](#)] [[Project](#)] [[Code](#)] **268 citations** (Google Scholar, Jul. 2026).
3. (**ACM TOG / SIGGRAPH Asia 2023**) *BakedAvatar: Baking Neural Fields for Real-Time Head Avatar Synthesis*. Hao-Bin Duan, Miao Wang, **Jin-Chuan Shi**, Xu-Chuan Chen, Yan-Pei Cao. [[Paper](#)] [[Project](#)] [[Code](#)]
4. (**TVCG 2023**) *SceneFusion: Room-Scale Environmental Fusion for Efficient Traveling Between Separate Virtual Environments*. Miao Wang, Yi-Jun Li, **Jin-Chuan Shi**, Frank Steinicke. [[Paper](#)]
5. (**IEEE VR 2022**) *Bullet Comments for 360° Video*. Yi-Jun Li, **Jin-Chuan Shi**, Fang-Lue Zhang, Miao Wang. [[Paper](#)]
6. (**IEEE VR 2021**) *Scene-Context-Aware Indoor Object Selection and Movement in VR*. Miao Wang, Ziming Ye, **Jin-Chuan Shi**, Yong-Liang Yang. [[Paper](#)]
7. (**CVPR Workshop 2026**) *AoE: Always-on Egocentric Human Video Collection for Embodied AI*. Bowen Yang, Zishuo Li, Yang Sun, Changtao Miao, Yifan Yang, Man Luo, Xiaotong Yan, Feng Jiang, **Jin-Chuan Shi**, Yankai Fu, Ning Chen, Junkai Zhao, Pengwei Wang, Guocai Yao, Shanghang Zhang, Hao Chen, Zhe Li, Kai Zhu. [[Paper](#)]
8. (**arXiv, June 2026**) *HORIZON: Recoverability-Governed Curriculum for Physical-Domain Scaling*. Chenhao Bai, Liqin Lu, Kaijun Wang, Hui Chen, **Jin-Chuan Shi**, Yuyang Liu, Hao Chen, Chunhua Shen. [[Paper](#)]
9. (**arXiv, May 2026**) *TriSplat: Simulation-Ready Feed-Forward 3D Scene Reconstruction*. Weijie Wang^{*}, Zimu Li^{*}, **Jin-Chuan Shi**, Zeyu Zhang, Botao Ye, Marc Pollefeys, Donny Y. Chen, Bohan Zhuang. [[Paper](#)] [[Project](#)] [[Code](#)]
10. (**arXiv, Oct. 2025**) *Mono4DEditor: Text-Driven 4D Scene Editing from Monocular Video via Point-Level Localization of Language-Embedded Gaussians*. **Jin-Chuan Shi**^{*}, Chengye Su^{*}, Jiajun Wang, Ariel Shamir, Miao Wang. [[Paper](#)]

HONORS AND AWARDS

- National Scholarship, China Ministry of Education 2024
- Outstanding Graduate Student, Beihang University 2024
- Outstanding Graduates of Beijing's Higher Education Institutions 2022
- Freshman Academic Scholarship (Special Prize), Beihang University 2018
- Outstanding Academic Scholarship, Beihang University 2019–2021, 2023
- Outstanding Student Leader Award, Beihang University 2019–2021

SERVICE

Reviewer: SIGGRAPH (Asia), NeurIPS, CVPR, AAAI, Pacific Graphics (PG), ISMAR

SKILLS

Programming: Python, C, C++, CUDA, C#, JavaScript, Java, LaTeX, Linux

Frameworks & Tools: PyTorch, CUDA kernel development, 3D Gaussian Splatting / NeRF pipelines, Open3D, PyTorch3D, MuJoCo, Isaac Sim, Blender, Unity3D, Git

Techniques: 3D/4D reconstruction, differentiable & neural rendering, hand-object pose estimation, motion retargeting to simulation, vision-language models and agentic pipelines, open-vocabulary scene understanding

Languages: English (fluent, CET-6 & TOEFL), Mandarin (native)