Jingsen Zhu

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Education

Cornell University, Ithaca, NY, USA — Aug. 2024 – Present
Ph.D. student in Computer Science (CS)

Zhejiang University, Hangzhou, China — Sept. 2021 – Mar. 2024
M.S. in Computer Science (CS)
Advisor: Prof. Yuchi Huo and Prof. Rui Wang
Collaborator: Dr. Fujun Luan and Prof. Qi Ye

Zhejiang University, Hangzhou, China — Sept. 2017 – June 2021
B.Eng. in Computer Science (CS), *GPA: 91.88/100, Rank: 1/154*
Advisor: Prof. Kai Bu

Research Interest

My research interests lie in the intersection between **Machine Learning**, **Computer Graphics** and **3D vision**. I'm recently interested in using **Bayesian inference** to model the uncertainties of graphics/vision tasks (like 3D reconstruction) and using **decision-making theory** for planning under uncertainty. I have extensive research experience in areas such as 3D reconstruction, inverse rendering, neural rendering, physics simulation, etc. I used to research computer architecture and system security during my undergraduate years.

Publications

* denotes equal contribution.

- **HairFormer: Transformer-Based Dynamic Neural Hair Simulation**
  Joy Xiaoji Zhang, Jingsen Zhu, Hanyu Chen, Steve Marschner
  Under submission, 2025. [Arxiv]
- **Inverse Rendering using Multi-Bounce Path Tracing and Reservoir Sampling**
  Yuxin Dai*, Qi Wang*, Jingsen Zhu*, Dianbing Xi, Yuchi Huo, Chen Qian, Ying He
  International Conference on Learning Representations (ICLR) 2025. [Arxiv] [Project] [Code]
- **FuseSR: Super Resolution for Real-time Rendering through Efficient Multi-resolution Fusion**
  Zhihua Zhong*, Jingsen Zhu*, Yuxin Dai, Chuankun Zheng, Guanlin Chen, Yuchi Huo, Rui Wang, Hujun Bao
  SIGGRAPH Asia 2023 Conference Papers. [Arxiv] [Project] [Code]
- **Seal-3D: Interactive Pixel-Level Editing for Neural Radiance Fields**
  Xiangyu Wang*, Jingsen Zhu*, Yunlong Ran, Zhihua Zhong, Yuchi Huo, Jiming Chen, Qi Ye
  IEEE/CVF International Conference on Computer Vision (ICCV) 2023. [Arxiv][Project] [Code]
- **I^2-SDF: Intrinsic Indoor Scene Reconstruction and Editing via Raytracing in Neural SDFs**
  Jingsen Zhu, Yuchi Huo, Qi Ye, Fujun Luan, Jifan Li, Dianbing Xi, Lisha Wang, Rui Tang, Wei Hua, Hujun Bao, Rui Wang
  IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023. [Arxiv][Project] [Code]
- **Learning-based Inverse Rendering of Complex Indoor Scenes with Differentiable Monte Carlo Raytracing**
  Jingsen Zhu, Fujun Luan, Yuchi Huo, Zihao Lin, Zhihua Zhong, Dianbing Xi, Rui Wang, Hujun Bao, Jiaxiang Zheng, Rui Tang
  SIGGRAPH Asia 2022 Conference Papers. [Arxiv] [Project]
- **Hitchhiker: Accelerating ORAM with Dynamic Scheduling**
  Jingsen Zhu, Mengming Li, Xingjian Zhang, Kai Bu, Miao Zhang, Tianqi Song
  IEEE Transactions on Computers (TC), 2023. [Paper]

Awards

- Finalist of 2025 Qualcomm Innovation Fellowship for North America 2025/04
- Zhejiang Provincial Outstanding Master Graduate 2024/03
- National Scholarship 2023/10
- "Outstanding Master's Student" Honorary Title 2023/09
- Outstanding Bachelor Graduate Award 2021/06
- "Academic Star" Honorary Title of CS department, ZJU (10/300+) 2020/09
- Zhejiang Provincial Scholarship 2018/10 and 2019/10

Professional Services

Teaching Assistant

- Introduction to Computer Vision, *Prof. Bharath Hariharan and Prof. Wei-Chiu Ma*, Cornell CS 4670 2025/01 – 2025/05
- Visual Imaging in the Electronic Age, *Prof. Donald P. Greenberg*, Cornell CS 1620 2024/08 – 2024/12
- Operating System, *Prof. Wenbo Shen*, Zhejiang University 2020/09 – 2020/12

Technical Paper Reviewer

- NeurIPS 2025
- ICCV 2025
- ICLR 2025
- ECCV Workshop 2024
- SIGGRAPH 2023, 2024
- SIGGRAPH Asia 2024
- CVPR 2024
- IEEE TVCG 2023, 2024, 2025
- Computational Visual Media 2023

Miscellaneous

- Programming Languages: C/C++, Python, CUDA, GLSL
- Languages: English - Fluent (TOEFL iBT: 109, CET6: 609), Mandarin and Cantonese - Native speaker
- Tools: PyTorch, JAX, Mitsuba, LaTeX, Markdown