Jiakai Zhang

▬ Introduction

I am currently a third-year Ph.D. candidate at ShanghaiTech University advised by Prof. Jingyi Yu. In the summer of 2022, I worked as a research scientist intern at Meta Reality Labs. Before that, I earned my Bachelor's degree in Computer Science from ShanghaiTech University. My current research focuses on protein discovery and understanding, which involves the use of cryo-EM, cryo-ET, and data-driven AI techniques. In addition to cryo-EM, I am also interested in computer vision, computer graphics, and computational photography. My work has been recognized with several publications at top conferences, such as SIGGRAPH 2021 and CVPR 2022. I am passionate about applying my research to create a real impact on the industry. This led me to co-found a startup, Cellverse, dedicated to developing an AI pipeline for next-generation protein discovery and drug development.

▬ Education

2020–Present   **Ph.D. Candidate**, *ShanghaiTech University*, Shanghai.
VRVC Lab, advised by Prof. Jingyi Yu. 5 publications. Deep Learning: A, Matrix Computation: A, Algorithm Design and Analysis:A, Frontiers of Computer Vision:A

2016–2020   **Bachelor**, *ShanghaiTech University*, Shanghai.
Linear Algebra: A, Introduction to Information Science and Technology: A, Data Structure: A, Web and Text Mining: A, Computer Vision: A-

▬ Experience

Vocational

2022.5– Present   **CEO, Co-founder**, *Cellverse*, Shanghai.
Responsible for fundraising, setting visionary roadmap, and team management.

2022.8– 2023.2   **Research Scientist Intern**, *Meta Reality Labs*, Redmond, WA.
Advised by Zhaoyang Lv, built a 3D-aware ego-centric question-answering system using neural radiance fields(NeRF) and ChatGPT.

2018.12– 2022.1   **Intern**, *Stereye Intelligent Technology Co.,Ltd.*, Shanghai.
Participate in algorithm and software development.

Miscellaneous

2020.9–2021.1   **TA of Computational Photography Class**, *ShanghaiTech University*, Shanghai.
Designed homework, gave lectures, and helped with final presentations for groups.

2018.5–2018.9   **"Intel Cup ESDC Webinar" Third Prize**, *ShanghaiTech University*, Shanghai.
Learned FPGA, deep learning, and team-working.

2017.7–2017.8 **Support Education Volunteer**, *Deyang*, Sichuan.
Taught pupils about basic science and Chinese culture. Raised a collection of books for leftover children.

Awards

2016.9–2020.6 **Undergraduate**, *ShanghaiTech University*, Shanghai.
- **Excellence Scholarship of ShanghaiTech University**
- **"Innovation, Originality and Entrepreneurship" Challenge Third Prize**
- **"Intel Cup ESDC Webinar" Third Prize**
- **"ShanghaiTech 2nd Innovation and Entrepreneurship Summit" First Prize**

2020.9– **Ph.D. Candidate**, *ShanghaiTech University*, Shanghai.
Present
- **National Scholarship**

Research Activities

Attendance ACM MM 2020, SIGGRAPH 2021, CVPR 2021, VIS 2021, SIGGRAPH 2022 Asia, CVPR 2022

Served as reviewer CVPR 2022, ECCV 2022, CVPR 2023

Publications

[1] Zhang Jiakai, Liu Xinhang, Ye Xinyi, Zhao Fuqiang, Zhang Yanshun, Wu Minye, Zhang Yingliang, Xu Lan, and Yu Jingyi. Editable free-viewpoint video using a layered neural representation. In *ACM SIGGRAPH*, 2021.

[2] Xinhang Liu, Yan Zeng, Yifan Qin, Hao Li, Jiakai Zhang, Lan Xu, and Jingyi Yu. Cryoformer: Continuous reconstruction of 3d structures from cryo-em data using transformer-based neural representations, 2023.

[3] Quan Meng, Jiakai Zhang, Qiang Hu, Xuming He, and Jingyi Yu. Lgnn: A context-aware line segment detector. In *Proceedings of the 28th ACM International Conference on Multimedia*, pages 4364–4372, 2020.

[4] Liao Wang, Jiakai Zhang, Xinhang Liu, Fuqiang Zhao, Yanshun Zhang, Yingliang Zhang, Minye Wu, Lan Xu, and Jingyi Yu. Fourier plenoctrees for dynamic radiance field rendering in real-time. *arXiv preprint arXiv:2202.08614*, 2022.

[5] Jiakai Zhang, Liao Wang, Xinhang Liu, Fuqiang Zhao, Minzhang Li, Haizhao Dai, Boyuan Zhang, Wei Yang, Lan Xu, and Jingyi Yu. Neuvv: Neural volumetric videos with immersive rendering and editing. *arXiv preprint arXiv:2202.06088*, 2022.

[6] Fuqiang Zhao, Yuheng Jiang, Kaixin Yao, Jiakai Zhang, Liao Wang, Haizhao Dai, Yuhui Zhong, Yingliang Zhang, Minye Wu, Lan Xu, and Jingyi Yu. Human performance modeling and rendering via neural animated mesh. *ACM Trans. Graph.*, 41(6), nov 2022.

[7] Fuqiang Zhao, Wei Yang, Jiakai Zhang, Pei Lin, Yingliang Zhang, Jingyi Yu, and Lan Xu. Humannerf: Generalizable neural human radiance field from sparse inputs. *arXiv preprint arXiv:2112.02789*, 2021.