KUNHAO LIU

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https://kunhao-liu.github.io/

EDUCATION

Ph.D. Student of Computer Science, Nanyang Technological University, Singapore   Aug. 2022 - Now
Supervised by Prof. Shijian Lu

Bachelor of Software Engineering, Beihang University, Beijing   Sep. 2018 - July 2022
Supervised by Prof. Lu Sheng
GPA: 3.8/4.0 (Top 10%) — Selected Courses: Parallel Program(A), Image Processing and Computer Vision(A+),
Probability and Statistics(A+), Discrete Mathematics(A-), Mathematical Analysis(A), Advanced Algebra(A)

RESEARCH EXPERIENCE

3D Scene Segmentation Using Open Vocabulary Texts   Dec. 2022 - Now
Advisor: Prof. Shijian Lu, Nanyang Technological University

- Presented a new pipeline for 3D open-vocabulary segmentation.
- Our approach distills 3D open-vocabulary segmentation from foundation models.
- Our method is capable of segmenting 3D scenes without any segmentation annotations.

3D Scene Appearance Editing through Style Transfer   Aug. 2022 - Mar. 2023
Advisor: Prof. Shijian Lu, Nanyang Technological University

- Introduced an innovative framework that can generate zero-shot high-quality 3D stylization.
- Resolved the three-way dilemma over geometry reconstruction, high-quality stylization, and zero-shot ability.
- Designed novel algorithms to maintain multi-view consistency and improve stylization efficiency.

2D Image Synthesis through Style Transfer   July 2021 - July 2022
Advisor: Prof. Lu Sheng, Beihang University

- Developed a zero-shot 2D style transfer algorithm utilizing Transformer and Bilateral Grid.
- Implemented a per-style-per-model style transfer algorithm using Transformer and Markovian discriminator.
- Both methods attain visually state-of-the-art performance.

PUBLICATIONS

Kunhao Liu, Fangneng Zhan, Jiahui Zhang, MUYU XU, Yingchen Yu, Abdulmotaleb El Saddik, Christian Theobalt, Eric Xing, Shijian Lu. *3D Open-vocabulary Segmentation with Foundation Models.* arXiv preprint arXiv:2305.14093.

Kunhao Liu, Fangneng Zhan, Yiwen Chen, Jiahui Zhang, Yingchen Yu, Abdulmotaleb El Saddik, Shijian Lu, Eric Xing. *StyleRF: Zero-shot 3D Style Transfer of Neural Radiance Fields.* 2023 IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR).

AWARDS AND HONORS

Outstanding Graduate of Beihang University   July 2022

Outstanding Graduation Thesis   July 2022

Scholarship for Academic Records   Sept. 2019-2021

SKILLS AND OTHERS

Languages: Chinese, English

Programming Languages: Python, Java, C, Swift, JavaScript, HTML, CSS

Tools: Pytorch, Numpy, Multithread MPI, SQL, Flask, Vue, Gsap, Swift UI, Linux, Shell