KUNHAO LIU

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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 Understanding & Decomposing Using Open Vocabulary Texts — Dec. 2022 - Now
Advisor: Prof. Shijian Lu, Nanyang Technological University

- Presented a new method for extracting 3D objects from intricate real-world scenes using open-vocabulary texts.
- Our approach transfers knowledge from a text2image diffusion model to 3D scenes with a generative loss.
- Our method is capable of detecting and segmenting 3D objects in a zero-shot manner.

3D Scene Appearance Editing through Style Transfer — Aug. 2022 - Now
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.
- Our method delivers state-of-the-art 3D stylization results and can realize practical applications.

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.

PUBLICATION

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