YIN YOUTAN

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EDUCATION

School of Computer Science and Engineering, Nanyang Technological University Aug 2022 - Present
Ph.D. student. Supervised by Prof Lin Guosheng.

College of Computer Science and Technology, Zhejiang University Sept 2018 - June 2022
Bachelor of Engineering. Working closely with Prof Song Mingli and Prof Shen Chengchao.

RESEARCH INTEREST

3D Reconstruction and Editing.

PROJECTS

3D Inpainting with Decouplable Gaussian Representation and 2D priors. Under Review.

Developed a novel 3D inpainting pipeline that combines Gaussian Splatting with pre-trained 2D inpainting models to remove specified regions in 3D scenes.

- Designed an interactive annotation process to generate multiview masks with minimal user input (point/text/box).
- Reconstructed a decouplable Gaussian field with depth supervision and applied artifact correction algorithms leveraging camera pose and depth data to refine inpainting results.
- Implemented CUDA-accelerated gradient derivation to enhance computational efficiency. Achieved state-of-the-art inpainting quality while handling complex occlusions beyond existing methods.

OR-NeRF: Object Removing from 3D Scenes Guided by Multiview Segmentation with Neural Radiance Fields. Under Review. [paper] [code]

Developed OR-NeRF, a fast and consistent 3D object removal pipeline for Neural Radiance Fields (NeRF).

- Enables object removal with point selections or text prompts while ensuring multiview consistency via 3D geometry propagation and sparse correspondence.
- Integrated Segment Anything (SAM) for automatic segmentation and a 2D inpainting model for realistic color restoration.
- Applied depth supervision and perceptual loss to maintain scene coherence. Achieved state-of-the-art quality with faster performance than existing methods.

PUBLICATIONS

Youtan Yin, Hongzheng Yang, Quande Liu, Meirui Jiang, Cheng Chen, Qi Dou, and Pheng-Ann Heng. *Efficient Federated Tumor Segmentation via Normalized Tensor Aggregation and Client Pruning.* International MICCAI Brainles Workshop, 2021.

Chengchao Shen, **Youtan Yin**, Xinchao Wang, Xubin Li, Jie Song, Mingli Song. *Training Generative Adversarial Networks in One Stage.* IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2021.

Chengchao Shen, Xinchao Wang, **Youtan Yin**, Jie Song, Sihui Luo, Mingli Song. *Progressive Network Grafting for Few-Shot Knowledge Distillation.* AAAI Conference on Artificial Intelligence (AAAI), 2021.

PUBLICATIONS

Python, PyTorch