Shiyao Xu

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Education

Peking University, Wangxuan Institute of Computer Technology 2020 – 2023

Master student in EECS, Computer Application Technology. Supervised by Prof. Zhouhui Lian.

Dalian University of Technology 2016 – 2020

B.S. in Software Engineering, Big Data. Supervised by Prof. Kun Lu

Research Experience

1. DeSRF: Deformable Stylized Radiance Field

Shiyao Xu**, Lingzhi Li, Li Shen, Zhouhui Lian. **CVPR 2023 Workshop

Brief Introduction: We propose a more efficient method, DeSRF, to stylize the radiance field, which also transfers style information to the geometry according to the input style. We introduce a deformable module into the stylization process, and a dilated sampling method for more efficient stylizing process.

2. Your3dEmoji: Creating Personalized Emojis via One-shot 3D-aware Cartoon Avatar Synthesis

***Shiyao Xu**, Lingzhi Li, Li Shen, Yifang Men, Zhouhui Lian. **SIGGRAPH ASIA 2022** Technical Communication*

Brief Introduction: We propose a novel 3D generative model to translate a real-world face image into its corresponding 3D avatar with only a single style example provided. Our model is 3D-aware in sense and also able to do attribute editing, such as smile, age, etc directly in the 3D domain.

3. Dynamic Texture Transfer using PatchMatch and Transformers

Guo Pu, **Shiyao Xu***, Zhouhui Lian. Under Review*

Brief Introduction: We propose a method to transfer a still image into the target dynamic effect automatically, which keeps not only the spatial-temporal stability but also a high-quality image effect. We introduce the PatchMatch and Transformers into the one-shot img2vid transfer task, and a Gaussian weighted average merging strategy for patch-embedded image smoothly assembling.

Working Experience

DAMO Academy Alibaba Inc. Research Intern 2021.08 – Present

Do some research on generation models and neural rendering, supervised by Lingzhi Li and Dr. Li Shen.

- **Image generation using Transformers.** Attempt to build an image generation model with purely Transformers based on ViT, ViTGAN, TransGAN, Swin-Transformer, etc. Do some improvements on the self-attentions, model architecture, and image processing methods. Achieving a comparable effect to TransGAN, etc, but still have a little gap with StyleGAN2-based models.
- **3D-aware image/scene generation and stylization.** Attempt to build the bridge between 2D and 3D worlds. Based on my background in style transfer, and previous research on generation models, 3DGANs, etc, proposed "Your3dEmoji" about 3D-aware cartoonalized portrait generation, and "DeSRF" about a deformable 3D neural radiance field stylization.

MISC

- Receive the Academy's annual scholarship in Peking University, 2022
- Serve as a Student Volunteer in **SIGGRAPH 2022**
- T.A. of Elementary Number Theory for undergraduate students, Peking University, Spring 2021.
- Hackathon PKU 2021, 2nd Award (ranking **2/30**)
- One of the **founders** of the college women's soccer team. Also a member of Women's Soccer Team, PKU
- Build the bridge between 2D and 3D world. Focus on neural rendering and generation models.