Kaiwen Zhang

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Education

Tsinghua University, Beijing, China Sep. 2021 - Present

Bachelor student in Computer Science and Technology (**3.95/4.0**, **Top 5%**)

Relevant Coursework

- Fundamentals of Programming (A+)
- Introduction to Computer Systems (A+)
- Introduction to Artificial Intelligence (A)
- Fundamentals of Computer Graphics (A)
- Software Engineering (A)
- Data Structures (A)
- Principles of Computer Networks (A)
- Discrete Mathematics I & II (A)
- Programming Training (A)
- Calculus A I & II (A)
- Linear Algebra (A)
- Probability and Statistics (A)

Working Experience

Intelligent Digital Creation Group, Shanghai AI Lab Jul. 2023 - Present

Research Intern Primary Advisor: Prof. Xingang Pan @ NTU MMLab (Remotely)

- Conduct research on image morphing based on diffusion models.
- Design a video neural representation that can represent detailed image features and consistent motions over time.
- Propose novel algorithms to enhance rationality and smoothness in real image interpolations, which exhibit excellent performance that surpasses all existing methods.
- **Paper is submitted to CVPR as the first author.** This is the first time that diffusion models have been used to create natural and seamless morphing of real-world images, unlocking the great potential of diffusion models for this task.
- Project page: https://kevin-thu.github.io/DiffMorpher_page

Knowledge Engineering Group, THU Sep. 2022 - Jun. 2023

Research Assistant Advisor: Prof. Jie Tang

- Design, implement and train a Variational Autoencoder specific to video data.
- Implement *Pix2Video: Video Editing using Image Diffusion* based on the Stable Diffusion model.
- Implement *Prompt-to-Prompt Image Editing with Cross-Attention Control* in the latent space.
- Explore introducing optical flow into video diffusion models and combining image models and video models to improve time consistency in video generation.

Student Association of Science and Technology, THU CST Aug. 2022 - Aug. 2023

Core member

- Serve as a summer training instructor for computer vision and generation models in AI track. Here is the website, the handout and the project designed by me.

Honors and Awards

National Scholarship (**Highest Honor** for undergraduates in China, $\sim$ **Top 0.2%**) Oct. 2023
Second Prize (3 / 109), The Jittor AI Challenge (Image Generation Track) Sept. 2023
Tsinghua University Comprehensive Excellence Scholarship (**Top 5%** undergraduates) Oct. 2022
Meritorious Winner (Top 10%), American Mathematical Contest in Modeling Mar. 2022