

HAOKUN ZHU

+86 13814847112 zhuhaokun@sjtu.edu.cn zwandering.github.io [zwandering](https://zwandering.github.io)

EDUCATION

- Shanghai Jiao Tong University** Shanghai, China
Bachelor of Science in Computer Science; GPA:3.84/4.3; 89.41/100 Sep. 2020 – Jun. 2024

RELEVANT COURSEWORK

- Linear Algebra(A+)
- Probability Statistics(A+)
- C++ Programming(A+)
- Data Structures
- Algorithm & Complexity
- Computer Architecture
- Operating Systems
- Computer Graphics(A+)
- Computer Network(A+)
- Artificial Intelligence(A+)
- Machine Learning(A)
- Data Science Intro.(A)

PUBLICATIONS

- Haokun Zhu**, Ran Yi, Teng Hu, Yu-Kun Lai, Paul L. Rosin, *AesStyler: Aesthetic Guided Universal Style Transfer*, Under Review(CVPR 2024), <https://zwandering.github.io/>
- Haokun Zhu***, Juang Ian Chong*, Teng Hu, Ran Yi, Yu-Kun Lai, Paul L. Rosin, *SAMVG: A Multi-stage Image Vectorization Model with the Segment-Anything Model*, Under Review(ICASSP 2024), <https://arxiv.org/abs/2311.05276>
- Teng Hu, Ran Yi, **Haokun Zhu**, Liang Liu, Jinlong Peng, Yabiao Wang, Chengjie Wang Lizhuang Ma, *Stroke-based Neural Painting and Stylization with Dynamically Predicted Painting Region*, ACM MM 2023, <https://arxiv.org/abs/2309.03504/>
- Teng Hu, Jiangning Zhang, Liang Liu, Ran Yi, Siqi Kou, **Haokun Zhu**, Xu Chen, Yabiao Wang, Chengjie Wang Lizhuang Ma, *Phasic Content Fusing Diffusion Model with Directional Distribution Consistency for Few-Shot Model Adaption*, ICCV 2023, <https://arxiv.org/abs/2309.03729/>

RESEARCH EXPERIENCE

- Digital Media Computer Vision Laboratory(DMCV) in SJTU** Shanghai, China
Undergraduate research assistant advised by Prof Ran Yi Oct. 2022 – Now
 - Few-shot Image Generation with Diffusion Model**: : how to employ diffusion model in producing high-quality and diverse images in a new domain with only a small number of training data.
 - Aesthetic Guided Universal Style Transfer**: : how to transfer the style of an arbitrary image to another content image while striking a balance among aesthetic qualities, style transformation and content preservation.
 - Stroke-based Neural Painting**: : how to recreate a pixel-based image with a set of brushstrokes like real human-beings while achieving both faithful reconstruction and stroke style at the same time.
 - Image Vectorization**: : how to transform raster images into scalable vector graphics which have superior adaptability and detailed representation.

TECHNICAL SKILLS

- Languages**: Python, C/C++, Matlab, LaTeX, Mandarin(native), English(fluent)
- Tools**: PyTorch, TensorFlow, OpenCV, OpenGL, LaTeX, Markdown, git

HONORS AND AWARDS

- Principal's Award** Shanghai, China
Affiliation: Shanghai Jiao Tong University Nov. 2022 - Nov. 2023
- Merit Scholarship** Shanghai, China
Affiliation: Shanghai Jiao Tong University 2021 & 2022

PROJECTS

- AesStyler: Aesthetic Guided Universal Style Transfer(Computer Vision)**: we propose AesStyler, a novel Aesthetic Guided Universal Style Transfer method, which utilizes pre-trained aesthetic assessment model, a novel Universal Aesthetic Codebook and a novel Universal and Specific Aesthetic-Guided Attention (USAesA) module. Extensive experiments and user-studies have shown that AesStyler generates aesthetically more pleasing results than SOTA methods. (Nov. 2023)
- SAMVG: A Multi-stage Image Vectorization Model with the Segment-Anything Model(Computer Vision, Computer Graphics)**: we propose SAMVG, a multi-stage model to vectorize raster images into SVG (Scalable Vector Graphics). Through a series of extensive experiments, we demonstrate that SAMVG can produce high quality SVGs in any domain while requiring less computation time and complexity compared to previous state-of-the-art methods. (Sep. 2023)
- Stroke-based Neural Painting and Stylization with Dynamically Predicted Painting Region(Computer Vision)**: we propose Compositional Neural Painter, a novel stroke-based rendering framework which dynamically predicts the next painting region based on the current canvas, instead of dividing the image plane uniformly into painting regions. Extensive experiments show our model outperforms the existing models in stroke-based neural painting. (Nov. 2022)
- Phasic Content Fusing Diffusion Model with Directional Distribution Consistency for Few-Shot Model Adaption(Computer Vision)**: we propose a novel phasic content fusing few-shot diffusion model with directional distribution consistency loss, which targets different learning objectives at distinct training stages. Theoretical analysis and experiments demonstrate the superiority of our approach in few-shot generative model adaption tasks. (Mar. 2023)
- Image-to-Image Translation: From Line to Sketch(Computer Vision)**: This is the CS3511 course project. We use two frameworks, pix2pix and pixel2style2pixel, to solve an image-to-image translation task: line generation sketch task. Both methods achieve good performance in this task. We also achieved great results in the workshop of CGI-PSG2023 with this project, ranking 3rd in FID and 2nd in SSIM. (May. 2023)