HEYANG JIANG

(+86) 13505810126◇ jianghy0581@gmail.com◇ Linkedin

EDUCATION

TSINGHUA University *2021.9 - 2025.6(expected)*
BS in Mathematics and Physics + Software Engineering
Overall GPA: 3.95/4.00 **Major Course GPA**: 3.98/4.00
Core courseworks: Advanced Algebra, Stochastic Process, Machine Learning, Artificial Intelligence

PUBLICATIONS

Bridging the Aesthetic Gap: Training-Free Multi-Layer Transparent Image Generation
Junwen Chen*, **Heyang Jiang***, Keming Wu, Ji Li, Chao Zhang, Keiji Yanai, Dong Chen, Yuhui Yuan. *In submission to the IEEE/CVF International Conference on Computer Vision (ICCV), 2025.*

Immiscible Diffusion: Accelerating Diffusion Training with Noise Assignment
Yiheng Li, **Heyang Jiang**, Akio Kodaira, Masayoshi Tomizuka, Kurt Keutzer, Chenfeng Xu. *In Proceedings of the 38th Annual Conference on Neural Information Processing Systems (NeurIPS), 2024*

Inf-DiT: Upsampling Any-Resolution Image with Memory-Efficient Diffusion Transformer
Zhuoyi Yang, **Heyang Jiang**, Wenyi Hong, Jiayan Teng, Wendi Zheng, Yuxiao Dong, Ming Ding, Jie Tang. *In Proceedings of the 18th European Conference on Computer Vision (ECCV), 2024*

EXPERIENCE

Research Intern, Microsoft Research Asia *Nov 2024 - Mar 2025*
Advisor: ***Dong Chen****, Principal Research Manager*
Yuhui Yuan*, Senior Researcher*

- Proposed a training-free data pipeline for transparent image generation, introducing LayerFLUX for single-layer and MultiLayerFLUX for multi-layer composition. Designed the Transparent Image Preference Scoring (TIPS) model to assess aesthetic quality, ensuring superior visual fidelity.
- Independently led the team to address severe aesthetic degradation in current text2multilayer model, introducing a two-stage training strategy combining large-scale pretraining with quality-tuning on ultra-high-quality data. Leveraged MultiLayerFLUX to build diverse datasets, training ART+, a state-of-the-art model that significantly improves multilayer aesthetics and is now a key company product.

Research Intern, Su Lab UCSD *Jun 2024 - Nov 2024*
Advisor: ***Hao Su****, associate professor of EECS of UCSD*

- Explored video generation using compressed representations to improve efficiency. Adapted ViT to extract difference vectors between frames, enabling video compression by combining the first frame's data with subsequent frame differences.
- Applied Stable Diffusion with ControlNet and IP-Adapter into the decoding process, preserving original details while incorporating generative capabilities for enhanced video output.

Remote Intern, Berkeley AI Research (BAIR) *Mar 2024 - Oct 2024*
Advisor: ***Kurt Keutzer****, professor of EECS of UC Berkeley*

- Proposed the Immiscible Diffusion strategy to address the image-noise matching issue in diffusion training. With just a single line of code modification, this strategy improved training speed by 10%, streamlining the training process. This work has been accepted for publication at NeurIPS 2024.
- Demonstrated the effectiveness of this method on various models (DDIM, Consistency) and datasets (CIFAR, Imagenet, LSUN, CeleBA). Extensive analyses and ablation studies revealed significant improvements in both speed and performance, outperforming existing methods.

Research Intern, ZHIPU AI and KEG LAB *Oct 2022 - Jul 2024*

Advisor: ***Jie Tang****, Professor of Computer Science, Tsinghua University*

Yuxiao Dong*, Associate Professor of Computer Science, Tsinghua University*

- Developed Semantic Diffusion and implemented an industrial-level image editing and autoregressive generation model, enabling efficient, high-quality image generation for diverse applications.
- Created Inf-DiT, a novel image super-resolution method utilizing block-based unidirectional cascading attention, achieving state-of-the-art results in FID, FIDcrop, PSNR, and SSIM across various resolutions. This work was published at ECCV 2024.

SKILLS

Programming Languages and Frameworks

Python(Pytorch), C++, C, Numpy, Panda, Git, Diffusers, Transformers, Latex

Languages

Chinese(Native), English(TOEFL:109 GRE:330)

AWARDS AND HONORS

NeurIPS Scholar Award *2024*

17th Spark Project (TOP 30/3000) , Tsinghua University *2024*

Award for Excellence in Research , Tsinghua University *2024*

First prize in Math Foundation Competition (TOP4) , Tsinghua University *2022*