Zhekai Chen
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Education

Zhejiang University, College of Computer Science and Technology   2021.09 - Present
  Major in Computer Science and Technology, with an **average GPA of 3.94/4.0**

Suzhou Academy of Jiangsu Province, Key Class   2018.09 - 2021.06

Honors & Awards

Member of 1st Qizhen Research Programme, Zhejiang University
3rd Scholarship of Zhejiang University   2024.11 / 2023.11 / 2022.11
3rd Prize of the Sixth Open Source Innovation Competition   2023.10
2nd Prize of National High School Mathematics Olympiad, Jiangsu Province   2020.11 / 2019.10

Research Experience

National CAD & CG Laboratory, Zhejiang University, Prof. Chunhua Shen's Group   2022.10 -

I began my research journey here, gaining foundational skills in problem definition, model design, and validation. I proposed and implemented FreeCompose, a zero-shot image composition method leveraging diffusion model priors, published at ECCV2024. Additionally, I contributed to AutoStory (minor revision at IJCV), which integrates large language models and generative models for automated storytelling image generation, and Framer, an interactive frame interpolation system under review at ICLR2025. These projects enhanced my expertise in generative models and their practical applications. I also co-authored a patent on using densely annotated synthetic data to improve portrait matting models, further broadening my research experience.

University of Illinois Urbana Champaign, Prof. Tong Zhang's Group   2024.5 - 2024.9

I learned advancements in large language models (LLM). As a co-author of Image Textualization (accepted at NIPS2024 Dataset Track), I contributed to creating geometrically aware image captions using expert vision models, achieving improved alignment and reduced hallucinations. Besides this, I explored reinforcement learning with human feedback (RLHF), especially RLHF in generative models, and gained insights into the regularization items.

Publications

Papers

1. **FreeCompose: Generic Zero-Shot Image Composition with Diffusion Prior**: **Zhekai Chen**, Wen Wang, Zhen Yang, Zeqing Yuan, Hao Chen, Chunhua Shen. Published at ECCV 2024 Conference.
2. **Framer: Interactive Frame Interpolation**: Wen Wang, Qiuyu Wang, Kecheng Zheng, Hao Ouyang, **Zhekai Chen**, Biao Gong, Hao Chen, Yujun Shen, Chunhua Shen. ICLR 2025 Conference Submission.
3. **Image Textualization: An Automatic Framework for Creating Accurate and Detailed Image Descriptions**: Renjie Pi, Jianshu Zhang, Jipeng Zhang, Rui Pan, **Zhekai Chen**, Tong Zhang. Accepted at NeurIPS 2024 Dataset Track.
4. **AutoStory: Generating Diverse Storytelling Images with Minimal Human Effort**: Wen Wang, Canyu Zhao, Hao Chen, **Zhekai Chen**, Kecheng Zheng, Chunhua Shen. Minor Revision at IJCV Journal.

Patents

1. A method of controllable generating video frame insertion based on diffusion model: Hao Chen, Wen Wang, **Zhekai Chen**, Chunhua Shen. Application Number 2024112552073.
2. A general zero-sample image synthesis method based on pre-training diffusion model: Hao Chen, **Zhekai Chen**, Wen Wang, Chunhua Shen. Application Number 2024108560819.
3. An image matting enhancement method and device based on dense annotation synthetic data: Kangyang Xie, **Zhekai Chen**, Hao Chen, Chunhua Shen. Application Number 2023115470403.

Development Project

QSC Mobile V4

This project is the fourth version of the Qiushichao mobile application, designed for convenient campus life. We built a brand new version under the Flutter framework. Specifically, we implemented full support for academic information, including class schedules, grade inquiries, and schedule arrangements, and through integration with the academic system, enabled automatic information updates. **There are 17k users in last 90 days**.

IoT Data Center

An IoT Data Center project based on python+vue, in the BS Software Design course. I received a perfect score in this course.

Open Source Contributions

FaceChain (Github **9.1k** stars)

A portrait synthesis tool based on diffusion models developed by Alibaba DAMO Academy. I made great contributions to the framework of the project and was recommended by the official for competition.

LMFlow (Github **8.3k** stars)

A convenient project for fine-tuning developed by HKUST, I contributed to the diffusion part.

Leadership & Activities

Department Head, Yunfeng College Student Union	2022.9 - 2023.6
Consultant, QSC Technology R&D Center, Zhejiang University	2022.9 - 2023.6
Officer, Animation Club, Zhejiang University	2022.3 - 2023.6
Officer, Yunfeng College Student Union	2021.9 - 2022.6
Developer, QSC Technology R&D Center, Zhejiang University	2021.9 - 2022.6

Volunteering

Reviewer, ICLR 2025	2024.10 - 2024.12
Freshmen Guide, Zhejiang University	2022.8 - 2023.8
University Ambassador, Zhejiang University	2021.12 - 2023.8
Volunteer Assistant, Zhejiang University Library	2022.4 - 2023.8
Volunteer, West Lake District Tourism Bureau	2021.9 - 2022.5

Skills

Coding

- Languages: Python, C++, Go, C, Dart, HTML, CSS, Javascript
- Frameworks: Pytorch, Django, Flask, Vue, Flutter
- Tools: Git, MySQL, SQLite
- Platforms: Linux, Windows, Mac, Raspberry

Video Production

Adobe Premiere (Pr) for video clipping, *Adobe After Effects (AE)* for special effects production

Language

- Chinese: Native
- English: TOEFL iBT Best Score 97 (R 28, L 24, S 20, W 25)

Hobbies & Interests

- Piano: Grade 10 (Highest amateur level)
- Go: 5-Dan (Highest amateur rank)
- Sketching: Grade 6
- Table Tennis
- J-POP Music