Yuhao Zhang

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Research Interest

- Computer Vision, Graphics
- I have a strong interest in utilizing the learning-based framework for comprehending and generating dynamic scenes via the following approaches:
  - Extract dynamic information from a large pre-trained model, i.e Stable Video Diffusion
  - Collect a dataset with specific dynamic information and train a learning-based framework to capture the underlying information

Education

Stanford University 2024/06 – Ongoing
Summer Research Internship

NUS (National University of Singapore) 2024/01 – 2024/05
Spring Exchange, Computer Science Department

HKUST (Hong Kong University of Science and Technology) 2021/09 – 2025/08 (Expected)
BSc in Computer Science & Mathematics
- GPA: 3.967/4.3 (top 2%)
- Major GPA: 4.045/4.3

Publication

DragVideo: Interactive Drag-style Video Editing (with Arxiv link) ECCV2024
Yufan Deng*, Ruida Wang*, **Yuhao ZHANG***, Chi-Keung Tang, Yu-Wing Tai
* indicates equal contribution. The order of authorship was determined alphabetically

Anymate: A Dataset and Baselines for Learning 3D Object Rigging Under Review
Yufan Deng*, **Yuhao ZHANG***, Chen Geng, Shangzhe Wu, Jiajun Wu
* indicates equal contribution. The order of authorship was determined alphabetically

Research Experience

Anymate: A Dataset and Baselines for Learning 3D Object Rigging 2024/03 – Ongoing
Advised by Prof. Jiajun Wu and Postdoc. Shangzhe Wu Stanford University
- Proposed Anymate Dataset, a large-scale dataset of **178K** 3D assets paired with expert-crafted rigging and skinning information—over **50 times larger** than existing datasets
- Develop a scalable learning-based auto-rigging framework with three sequential modules for joint, connectivity, and skinning weight prediction
- Our framework significantly outperforms existing methods, producing accurate bone skeletons and skinning weights for realistic animations

DragVideo: Interactive Drag-style Video Editing 2023/07 – 2024/02
Advised by Prof. Chi-Keung Tang HKUST
And Prof. Yu-Wing Tai Dartmouth College
- Propose a novel method for drag-style Video Editing with a user-friendly interface
- Use the 3D diffusion model and task-specific LoRA to solve the frame inconsistency in the editing process
- Accept by **ECCV24**
- Chosen to be featured in HuggingFace's "**Daily Paper**" within 48 hours after uploading

Learning and Adversarial Style Augmentation for Unseen Domain Anomaly Detection 2022/09 – 2023/9
Advised by Prof. Hao Chen HKUST
- Researched medical abnormal detection in the unseen domain.
- Try to solve the domain shift problem by applying style augmentation and dual branch inference.

Projects

Review on theoretical understanding of Transformers(with link) 2023/09 – 2023/12
Project of Postgraduate Machine Learning Course HKUST

- Research on the White-Box Transformer and its architecture
- Look into several current research directions like Training Dynamics, Expressiveness, and theoretical explorations into Transformers applied in Computer Vision and Graph

Research Intern in StatML Lab 2023/2 – 2023/5
Advised by Prof. Tong Zhang HKUST

- Contribute to developing **LLM-FT**, a codebase for large language model finetuning and inference
- Collect and preprocess academic data for large language model training

Selected Awards

- Summer Research Scholarship(HKD$20000 from Computer Science, HKD$5000 from Math)
- Chern Class Talent Scholarship Award (For top students in the math department)
- HKUST Scholarship for Continuing Undergraduate Students (HKD$10000 per year)
- HKUST Study Abroad Funding Support 24' (HKD$10,000)
- Dean's list for all semesters (TGA 3.7 or above, top 10 percentile)

Activities

- Heidelberg Laureate Forum, Sep 2024, Heidelberg, Germany
- The European Conference on Computer Vision (ECCV), October 2024, Milano, Italian

Standardized Tests

- **TOEFL iBT**: 105(Reading 29, Listening 28, Speaking 23, Writing 25)

Skills

- **Tools**: PyTorch, LaTeX, Markdown, git, Java, C++
- **Language**: Mandarin (Native), English (Fluent)