Yuhao Zhang

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Research Interest

I am primarily interested in **Computer Vision** and **Computer Graphics**, with a specific interest in **leveraging machine learning techniques to comprehend dynamic information in the physical world**

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 – 2025/06 (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 (With paper link) 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 2023/06 – 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 video 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

Projects

Review on theoretical understanding of Transformers(with report 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

Learning and Adversarial Style Augmentation for Unseen Domain Anomaly Detection 2022/09 – 2023/9
Advised by Prof. Hao Chen HKUST

- Undergraduate Research Opportunity (UROP) at HKUST
- Researched medical **abnormal detection** in the unseen domain
- Try to solve the domain shift problem by applying style augmentation and dual branch inference

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 fine-tuning and inference
- Collect and preprocess academic data from **Semantic Scholar** 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++, Blender
- **Language**: Mandarin (Native), English (Fluent)