

# Yuhao Zhang

yzhanglp@connect.ust.hk | [github.com/yzhanglp](https://github.com/yzhanglp) | [yzhanglp.com](https://yzhanglp.com)

## 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

<b>Stanford University</b> Summer Research Internship	2024/06 – Ongoing
<b>NUS (National University of Singapore)</b> Spring Exchange, Computer Science Department	2024/01 – 2024/05
<b>HKUST (Hong Kong University of Science and Technology)</b> BSc in Computer Science & Mathematics <ul style="list-style-type: none"><li>GPA: 3.967/4.3 (top 2%)</li><li>Major GPA: 4.045/4.3</li></ul>	2021/09 – 2025/06 (Expected)

## Publication

<b>DragVideo: Interactive Drag-style Video Editing</b> (With Arxiv link) Yufan Deng*, Ruida Wang*, <b>Yuhao Zhang*</b> , Chi-Keung Tang, Yu-Wing Tai * indicates equal contribution. The order of authorship was determined alphabetically.	ECCV2024
<b>Anymate: A Dataset and Baselines for Learning 3D Object Rigging</b> (With paper link) <b>Yuhao Zhang*</b> , Yufan Deng*, Chen Geng, Shangzhe Wu, Jiajun Wu * indicates equal contribution. The order of authorship was determined alphabetically.	Under Review

## Research Experience

<b>Anymate: A Dataset and Baselines for Learning 3D Object Rigging</b> Advised by <a href="#">Prof. Jiajun Wu</a> and <a href="#">Postdoc. Shangzhe Wu</a> <ul style="list-style-type: none"><li>Proposed <b>Anymate Dataset</b>, a large-scale dataset of <b>178K</b> 3D assets paired with expert-crafted rigging and skinning information—over <b>50 times larger</b> than existing datasets.</li><li>Develop a scalable learning-based auto-rigging framework with three sequential modules for joint, connectivity, and skinning weight prediction.</li><li>Our framework significantly outperforms existing methods, producing accurate bone skeletons and skinning weights for realistic animations.</li></ul>	2024/03 – Ongoing Stanford University
<b>DragVideo: Interactive Drag-style Video Editing</b> Advised by <a href="#">Prof. Chi-Keung Tang</a> And <a href="#">Prof. Yu-Wing Tai</a> <ul style="list-style-type: none"><li>Propose a novel method for <b>drag-style Video Editing</b> with a user-friendly interface.</li><li>Use the video diffusion model and task-specific LoRA to solve the frame inconsistency in the editing process.</li><li>Accepted by <b>ECCV24</b>.</li><li>Chosen to be featured in HuggingFace’s “<b>Daily Paper</b>” within 48 hours after uploading.</li></ul>	2023/06 – 2024/02 HKUST Dartmouth College

## Projects

<b>Review on theoretical understanding of Transformers</b> (with report link) Project of Postgraduate Machine Learning Course <ul style="list-style-type: none"><li>Research on the <b>White-Box Transformer</b> and its architecture.</li><li>Look into several current research directions like Training Dynamics, Expressiveness, and theoretical explorations into Transformers applied in Computer Vision and Graph.</li></ul>	2023/09 – 2023/12 HKUST
<b>Learning and Adversarial Style Augmentation for Unseen Domain Anomaly Detection</b> Advised by <a href="#">Prof. Hao Chen</a>	2022/09 – 2023/9 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

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- 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

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

### Standardized Tests

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

### Skills

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