Yukang ⟨操雨康⟩ Cao

PH.D. @ THE UNIVERSITY OF HONG KONG

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Research Interests

Computer Vision and Deep Learning: 3D model reconstruction, 3D artificial intelligence generated content (AIGC), face/head related tasks, camera calibration, and machine intelligence

Education

The University of Hong Kong (HKU)   *Hong Kong SAR, China*
Ph.D., COMPUTER SCIENCE   *Sept. 2020 - April. 2024 (expect)*
- Supervisor: Dr. Kwan-Yee K. Wong.

Zhejiang University (ZJU)   *Hangzhou, China*
Bachelor of Engineering   *Sept. 2016 - June 2020*
- GPA: 3.84/4, ranking: 3/66

Experiences

Tecent PCG ARC Lab   *Beijing, China*
RESEARCH INTERN   *Dec. 2022 - Jun. 2023*
- Mentor: Dr. Yan-Pei Cao
- Project: 3D Human Avatar Generation via Diffusion Model

The University of Texas at Austin   *Austin, USA*
RESEARCH ASSISTANT   *July. 2019 - Nov. 2019*
- Mentor: Dr. Chandrajit Bajaj
- Project: Designing Deep Nets for Variational Image Processing
- Admitted to Computational Science, Engineering, and Mathematics (CSEM) with NIMS fellowship in 2020

Peking University   *Beijing, China*
RESEARCH FELLOW   *Sept. 2019 - Dec. 2019*
- Mentor: Dr. Dehua Xiong
- Project: LSTM Application in Stock Forecast

Tsinghua University   *Beijing, China*
RESEARCH ASSISTANT   *July. 2018 - Oct. 2018*
- Mentor: Dr. Zuoqiang Shi
- Project: Low Dimensional Manifold Model for Image Processing

Publications

(* Equal contribution, † Corresponding author)

DreamAvatar: Text-and-Shape Guided 3D Human Avatar Generation via Diffusion Models.   *CVPR 2024*
Yukang Cao*, Yan-Pei Cao*, Kai Han[†], Ying Shan, Kwan-Yee K. Wong.

Guide3D: Create 3D Avatars from Text and Image Guidance.   *Under Review*
Yukang Cao, Yan-Pei Cao, Kai Han[†], Ying Shan, Kwan-Yee K. Wong.

HeadSculpt: Crafting 3D Head Avatars with Text   *NeurIPS 2023*
Xiao Han*, **Yukang Cao***, Kai Han, Xiatian Zhu, Jiankang Deng, Yi-Zhe Song, Tao Xiang[†], Kwan-Yee K. Wong[†].

SeSDF: Self-evolved Signed Distance Field for Implicit 3D Clothed Human Reconstruction.   *CVPR 2023*
Yukang Cao, Kai Han, Kwan-Yee K. Wong.

JIFF: Jointly-aligned Implicit Face Function for High Quality Single View Clothed Human Reconstruction.   *CVPR 2022*
Yukang Cao, Guanying Chen, Kai Han, Wenqi Yang, Kwan-Yee K. Wong. **(Oral Presentation)**

MA-NeRF: Motion-Assisted Neural Radiance Fields for Face Synthesis from Sparse Images.   *ICME 2023*
Weichen Zhang*, Xiang Zhou*, **Yukang Cao**, Wensen Feng, Chun Yuan.

Honors & Awards

2020 - 2024	HKU Presidential Scholarship (HKU-PS, Highest Distinction in Hong Kong)	*Hong Kong SAR, CHina*
2023	M. Braun Postgraduate Prize	*HKU, China*
2022, 2023	The Arthur and Louise May Memorial Fund Scholarship	*HKU, China*
2022	HK & China Gas Co Ltd Postgraduate Prize	*Hong Kong SAR, China*
2021	Y S and Christabel Lung Postgraduate Scholarship	*HKU, China*
2018	China Harbor second-class scholarship	*Zhejiang University, China*
2018	Honorable Mention Prize, Mathematical Contest in Modeling (MCM)	*COMAP, USA*
2017, 2018	Zhejiang University Outstanding Second Class Scholarship	*Zhejiang University, China*
2017, 2018	Zhejiang Provincial Government Scholarship (Top Distinction in Zhejiang)	*Zhejiang province, China*

Professional Services

Conference reviewer / Program Committee
- Conference on Neural Information Processing Systems (NeurIPS) 2023 -
- International Conference on Computer Vision (ICCV) 2023 -
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) 2023 -
- ACM SIGGRAPH Asia 2023 -
- Pacific Graphics 2023 -
- Association for the Advancement of Artificial Intelligence (AAAI) 2024 -
- International Conference on Learning Representations (ICLR) 2024 -
- International Conference on Machine Learning (ICML) 2024 -
- European Conference on Computer Vision (ECCV) 2024 -
- Asian Conference on Computer Vision (ACCV) 2024 -

Invited Talks

07. Dec. 2023	3D Human Modeling from Text and Image Guidance	*MMLab NTU*
17. July. 2023	Avatar-X: Text Guided Controllable and Editable 3D Human Generation	*Gap Lab CUHK-Shenzhen*
10. Aug. 2023	Avatar-X: Text Guided Controllable and Editable 3D Human Generation	*Online at 智东西*

Teaching Activities

2022 Fall	COMP3270 Artificial Intelligence	*HKU, China*
2021 Fall	COMP2396 Object-Oriented Programming and Java	*HKU, China*

Skills

Programming Languages	`Python, Matlab, C, C++, Java`
Languages	Chinese (native speaker), English (proficiency)
Others	PyTorch(3d), Tensorflow, LaTeX, OpenCV, etc