

Ziang Cao

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Education

Nanyang Technological University

Ph.D in MMLab@NTU

Aug. 2024 - Present

GPA: 4.83/5.0 (93.54/100)

Supervisor: Prof. Ziwei. Liu

Tongji University

B.Eng. in Vehicle Engineering

Sept. 2017 - Jun. 2022

GPA: 4.82/5.0 (93.16/100)

Supervisor: Prof. Changhong Fu

Professional Experience

AI4CE Lab in NYU

Jun. 2021 - Jun. 2022

Research Intern

- Creating the first action target prediction benchmark and EgoPAT3D, an RNN-based framework focused on predicting the objective of action.
- Contributing to the multi-modality data processing for the new dataset to achieve action target prediction.

Shanghai Artificial Intelligence Laboratory

Jun. 2022 - Feb. 2023

Researcher

- Contributing to the data preprocessing pipeline for the first large-vocabulary 3D objects dataset.

MMLab@NTU

Feb. 2023 - Aug. 2024

Research Associate

- Developed a new 3D generation framework, DiffTF, which is the first large-vocabulary feed-forward framework for high-quality 3D object generation.
- Contributing to the 3D reconstruction for large-scale 3D generation model.

Publication

PhysX-Anything: Simulation-Ready Physical 3D Assets from Single Image

Ziang Cao, Fangzhou Hong, Zhaoxi Chen, Liang Pan, Ziwei Liu

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026)

🏠 [Paper link](#) 📄 [Github repo](#) 🌐 [Home page](#)

Collaborative multi-modal coding for high-quality 3d generation

Ziang Cao, Zhaoxi Chen, Liang Pan, Ziwei Liu

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

🏠 [Paper link](#)

PhysX-3D: Physical-Grounded 3D Asset Generation

Ziang Cao, Zhaoxi Chen, Liang Pan, Ziwei Liu

Neural Information Processing Systems (NeurIPS 2025, Spotlight)

🏠 [Paper link](#) 📄 [Github repo](#) 🌐 [Home page](#)

3DTopia-XL: Scaling High-quality 3D Asset Generation via Primitive Diffusion

Zhaoxi Chen, Jiaxiang Tang, Yuhao Dong, Ziang Cao, Fangzhou Hong,

Yushi Lan, Tengfei Wang, Haozhe Xie, Tong Wu, Shunsuke Saito, Liang Pan, Dahua Lin, Ziwei Liu

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2025)

🏠 [Paper link](#) 📄 [Github repo](#) 🌐 [Home page](#)

DiffTF++: 3D-aware Diffusion Transformer for Large-Vocabulary 3D Generation

Ziang Cao, Fangzhou Hong, Tong Wu, Liang Pan, Ziwei Liu

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2024

🏠 [Paper link](#) 📄 [Github repo](#)

Large-Vocabulary 3D Diffusion Model with Transformer

Ziang Cao, Fangzhou Hong, Tong Wu, Liang Pan, Ziwei Liu

International Conference on Learning Representations (ICLR 2024)

[🏠 Paper link](#) [📄 Github repo](#) [📺 Video](#) [🌐 Home page](#)

Towards Real-World Visual Tracking with Temporal Contexts

Ziang Cao, Ziyuan Huang, Liang Pan, Shiwei Zhang, Ziwei Liu, Changhong Fu

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2023

[🏠 Paper link](#) [📄 Github repo](#)

TCTrack: Temporal Contexts for Aerial Tracking

Ziang Cao, Ziyuan Huang, Liang Pan, Shiwei Zhang, Ziwei Liu, Changhong Fu

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2022)

[🏠 Paper link](#) [📄 Github repo](#)

Egocentric Prediction of Action Target in 3D

Yiming Li*, **Ziang Cao***, Andrew Liang, Benjamin S Liang, Luoyao Chen, Hang Zhao, Chen Feng (* *equal contribution*)

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2022)

[🏠 Paper link](#) [📄 Github repo](#) [🌐 Home page](#)

HiFT: Hierarchical Feature Transformer for Aerial Tracking

Ziang Cao, Changhong Fu, Junjie Ye, Bowen Li, Yiming Li

IEEE International Conference on Computer Vision (ICCV 2021)

[🏠 Paper link](#) [📄 Github repo](#)

SiamAPN++: Siamese Attentional Aggregation Network for Real-Time UAV Tracking

Ziang Cao, Changhong Fu, Junjie Ye, Bowen Li, Yiming Li

IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2021)

[🏠 Paper link](#) [📄 Github repo](#)

Onboard Real-Time Aerial Tracking with Efficient Siamese Anchor Proposal Network

Changhong Fu, **Ziang Cao**, Yiming Li, Junjie Ye, Chen Feng (*First student author*)

IEEE Transactions on Geoscience and Remote Sensing (TGRS), 2021, IF=8.2

[🏠 Paper link](#) [📄 Github repo](#)

Siamese Anchor Proposal Network for High-Speed Aerial Tracking

Changhong Fu, **Ziang Cao**, Yiming Li, Junjie Ye, Chen Feng (*First student author*)

IEEE International Conference on Robotics and Automation (ICRA 2021)

[🏠 Paper link](#) [📄 Github repo](#)

Honors& Awards

China3DV Rising Star Award, 2026

Google PhD Fellowship, 2025

Champion solution in OmniObject3D Challenge @ ICCV 2023:

[Champion method in 3D generation track hosted by AI for 3D Content Creation Workshop.](#)

National Scholarship (top 1%), 2021

National Scholarship (top 1%), 2020

National Scholarship (top 1%), 2019

Baosteel Scholarship (top 0.5%), 2018

First Prize of Tongji undergraduate advanced mathematics competition, 2018

Second Prize of Shanghai undergraduate advanced mathematics competition, 2018

Second Prize of Chinese undergraduate advanced mathematics competition, 2018

First Prize of Shanghai advanced mapping technology and innovative design competition, 2019

Honda China ECO-Mileage Challenge, 2019

Champion design of the challenge hosted by Honda.

Research star of Tongji, 2021

Excellent undergraduate student of shanghai, 2022