

# 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

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

Zhaoxi Chen, Jiayang 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)*

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**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)*

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**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)*

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## **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**

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**National Scholarship (top 1%), 2018**

**National Scholarship (top 1%), 2019**

**National Scholarship (top 1%), 2020**

**Baosteel Scholarship (top 0.5%), 2021**

**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**

**Champion solution** in OmniObject3D Challenge @ ICCV 2023:

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