

# Ziang Cao

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## Education

### Tongji University

B.Eng. in Vehicle Engineering

Scholarship: National Scholarship (top 1%) × 3, Baogang Scholarship (top 0.5%)

Sept. 2017 - Jun. 2022

**GPA: 4.82/5.0 (93.16/100)**

Advisor: 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 - Present

#### 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

### Large-Vocabulary 3D Diffusion Model with Transformer

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

Under review (ICLR 2024), Rate: 6 6 6

🏠 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, IF=23.6

🏠 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)

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### 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](#)

### **Siamese object tracking for unmanned aerial vehicle: A review and comprehensive analysis**

Changhong Fu, Kunhan Lu, Guangze Zheng, Junjie Ye, **Ziang Cao**, Bowen Li, Geng Lu

*Artificial Intelligence Review, 2022*

[🏠 Paper link](#) [📄 Github repo](#)

### **Local Perception-Aware Transformer for Aerial Tracking**

Changhong Fu, Weiyu Peng, Sihang Li, Junjie Ye, **Ziang Cao**

*IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)*

[🏠 Paper link](#) [📄 Github repo](#)

### **Ad2Attack: Adaptive Adversarial Attack on Real-Time UAV Tracking**

Changhong Fu, Sihang Li, Xinnan Yuan, Junjie Ye, **Ziang Cao**, Fangqiang Ding

*IEEE International Conference on Robotics and Automation (ICRA 2022)*

[🏠 Paper link](#) [📄 Github repo](#)

### **Tracker meets night: A transformer enhancer for UAV tracking**

Junjie Ye, Changhong Fu, **Ziang Cao**, Shan An, Guangze Zheng, Bowen Li

*IEEE Robotics and Automation Letters (IEEE-RAL), 2022, IF=5.2*

[🏠 Paper link](#) [📄 Github repo](#)

### **DarkLighter: Light Up the Darkness for UAV Tracking**

Junjie Ye, Changhong Fu, Guangze Zheng, **Ziang Cao**, Bowen Li

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

[🏠 Paper link](#) [📄 Github repo](#)

## Honors& Awards

**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**

**OmniObject3D Challenge @ ICCV 2023:**

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

## Personal Traits

### **Skills:**

Python, Pytorch, Latex, C/C++, AutoCAD, Solidworks

### **Research interests:**

3D generation, computer vision, multi-modality task