

# SHENYUAN GAO

3rd-year Ph.D. student at HKUST

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## EDUCATION

### Hong Kong University of Science and Technology

Ph.D. in Electronic and Computer Engineering

Advised by Prof. Jun Zhang (IEEE Fellow)

2022 - 2026 (*expected*)

### Huazhong University of Science and Technology

B.Eng. in Electronic Information Engineering

Advanced Class (Elite Program for Information Science, 30/400)

2018 - 2022

GPA: 3.9/4.0

Rank: 1/30

## RESEARCH INTEREST

**Embodied AI** Autonomous Driving, Generalist Robot, Real-World Decision Making

**Generative AI** World Models, Diffusion Models, Vision-Language Foundation Models

## PUBLICATION

### Vista: A Generalizable Driving World Model with High Fidelity and Versatile Controllability

Shenyuan Gao, Jiazhi Yang, Li Chen, Kashyap Chitta, Yihang Qiu, Andreas Geiger, Jun Zhang, Hongyang Li

Accepted by NeurIPS 2024.

[\[Paper\]](#) [\[Demo\]](#) [\[Code\]](#) (300+ stars within 2 weeks)

### Generalized Predictive Model for Autonomous Driving

Jiazhi Yang\*, Shenyuan Gao\*, Yihang Qiu\*, Li Chen, Tianyu Li, Bo Dai, Kashyap Chitta, Penghao Wu, Jia Zeng, Ping Luo, Jun Zhang, Andreas Geiger, Yu Qiao, Hongyang Li

Accepted by CVPR 2024 as *Highlight* (**Top 2.8%**).

[\[Paper\]](#) [\[Dataset\]](#)

### Generalized Relation Modeling for Transformer Tracking

Shenyuan Gao, Chunluan Zhou, Jun Zhang

Accepted by CVPR 2023.

[\[Paper\]](#) [\[Code\]](#)

### AiATrack: Attention in Attention for Transformer Visual Tracking

Shenyuan Gao, Chunluan Zhou, Chao Ma, Xinggang Wang, Junsong Yuan

Accepted by ECCV 2022.

[\[Paper\]](#) [\[Code\]](#)

### Content-Aware Masked Image Modeling Transformer for Stereo Image Compression

Xinjie Zhang, Shenyuan Gao, Zhening Liu, Jiawei Shao, Xingtong Ge, Dailan He, Tongda Xu, Yan Wang, Jun Zhang

[\[Paper\]](#)

## EXPERIENCE

### Shanghai Artificial Intelligence Laboratory, OpenDriveLab

Research Intern

April 2023 - present

Shanghai, China

- Leader: Prof. Hongyang Li
- Worked on foundation models for autonomous driving.
- Experienced in large-scale training with hundreds of GPUs and thousands of hours of video data.

- Developed a driving world model with strong generalization to diverse scenarios and applications.

### **Hong Kong University of Science and Technology**

*Research Postgraduate Program*

September 2022 - present

*Hong Kong SAR, China*

- Advisor: Prof. Jun Zhang (IEEE Fellow)
- Worked on object tracking and neural compression.
- Worked on multi-agent perception system.
- Proposed a generalized relation modeling formulation for Transformer-based tracking.
- Proposed a content-aware masked image modeling for bidirectional prior interaction.

### **Huazhong University of Science and Technology**

*Final Year Project for Bachelor Degree*

March 2022 - June 2022

*Wuhan, China*

- Advisor: Prof. Peng Yang
- Worked on the intersection of tracking and efficient deep learning.
- Proposed a slimmable tracker with hierarchical weight sharing.
- Awarded as outstanding graduation thesis.

### **University at Buffalo**

*Summer Research Intern*

July 2021 - March 2022

*New York, United States (Remote)*

- Advisor: Prof. Junsong Yuan (IEEE Fellow)
- Worked on object tracking.
- Proposed Attention in Attention to facilitate correspondence learning.

### **The University of Hong Kong, MMLab**

*HKU CS Summer Research Internship Programme*

July 2021 - August 2021

*Hong Kong SAR, China (Remote)*

- Advisor: Prof. Ping Luo
- Worked on the intersection of tracking and visual grounding.
- Completed the research project successfully with full stipend award.

## **HONORS AND AWARDS**

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• Full Postgraduate Scholarship	2022-2026
• RedBird PhD Scholarship	2022-2023
• Outstanding Graduate	2022
• Outstanding Graduation Thesis	2022
• Outstanding Undergraduate in Terms of Academic Performance ( <b>Top 1%</b> )	2019
• National Scholarship ( <b>Top 2%</b> )	2019

## **ACADEMIC SERVICES**

### **Conference Reviewer**

ICLR 2025, NeurIPS 2023/2024, CVPR 2023/2024, ECCV 2024, AAAI 2025, AISTATS 2025, ICPR 2024

### **Journal Reviewer**

TPAMI, TMM, TCSVT, IMAVIS

### **Teaching Assistant**

COMP 5214: Advanced Deep Learning Architectures (for postgraduate/undergraduate)

ELEC 3100: Signal Processing and Communications (for undergraduate)

## MISC

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During my undergraduate, I built and launched a personal blog on my own.

So far, I have posted about 177,000 words of notes and already received 150,000 views from 100,000 unique visitors.

I am a crazy fan of One Piece comics (not its animation).

I own 14 T-shirts with One Piece characters, which allows me to change for 2 weeks without repeating.