SHENYUAN GAO

3rd-year Ph.D. student at HKUST
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RESEARCH INTEREST

Embodied AI Generalist Robot, Learning from Internet Video
Generative AI World Model, Diffusion, Vision-Language Model

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

OpenDriveLab April 2023 - present
Research Intern *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 September 2022 - present
Research Postgraduate Program *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 March 2022 - June 2022
Final Year Project for Bachelor Degree *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 July 2021 - March 2022
Summer Research Intern *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 July 2021 - Augest 2021
HKU CS Summer Research Internship Programme *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.

EDUCATION

Hong Kong University of Science and Technology *2022 - 2026 (expected)*
Ph.D. in Electronic and Computer Engineering
Advised by Prof. Jun Zhang (IEEE Fellow)

Huazhong University of Science and Technology *2018 - 2022*
B.Eng. in Electronic Information Engineering GPA: 3.9/4.0
Advanced Class (Elite Program for Information Science, 30/400) Rank: 1/30

HONORS AND AWARDS

- NeurIPS Top Reviewer 2024
- Full Postgraduate Scholarship 2022-2026
- RedBird PhD Scholarship 2022-2023
- Outstanding Graduate 2022
- Outstanding Graduation Thesis 2022
- Outstanding Undergraduate in Terms of Academic Performance (**Top 1%**) 2019
- National Scholarship (**Top 2%**) 2019

ACADEMIC SERVICES

Conference Reviewer
ICLR 2025, NeurIPS 2023/2024, CVPR 2023/2024/2025, 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)

CODING LANGUAGE

Python, PyTorch, HTML, LaTeX

MISC

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.