

JIAZHI YANG

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EDUCATION

The Chinese University of Hong Kong, MMLab

Aug. 2024 –Present

PhD Student in Information Engineering, Advisor: Xiangyu Yue

Sichuan University

Aug. 2018 –July. 2022

B.S. in Computer Science and Technology, Honored class

RESEARCH INTERESTS

Embodied Decision Making. Robot Learning. Autonomous Driving. End-to-end Policy.

Visual Intelligence. Generalizable World Models. Video Generation Models.

PUBLICATIONS

- **Planning-oriented Autonomous Driving**

Y. Hu*, **Jiazhi Yang***, L. Chen*, K. Li*, C. Sima, X. Zhu, S. Chai, S. Du, T. Lin, W. Wang, L. Lu, X. Jia, Q. Liu, J. Dai, Y. Qiao, H. Li. *equal contribution.

CVPR 2023. Best Paper Award, out of 2359 accepted papers, Co-first Author.

- Proposed a planning-oriented design for autonomous driving systems: Unifying perception, prediction, and planning together with end-to-end training, for safe autonomy.

- **Generalized Predictive Model for Autonomous Driving**

Jiazhi Yang*, S. Gao*, Y. Qiu*, L. Chen*, T. Li, B. Dai, K. Chitta, P. Wu, J. Zeng, P. Luo, J. Zhang, A. Geiger, Y. Qiao, H. Li. *equal contribution.

CVPR 2024. Highlight Paper (Top 2.8%).

- A billion-scale predictive model for autonomous driving. It is pre-trained on a unified video prediction task and can generalize to unseen datasets and tasks across different domains in a zero-shot manner.
- The *largest* multi-modal driving dataset to date, OpenDV-2k. It comprises 2000 hours of driving videos and language instructions to support the training of foundation models in driving.

- **ReSim: Reliable World Simulation for Autonomous Driving**

Jiazhi Yang, K. Chitta, S. Gao, L. Chen, Y. Shao, X. Jia, H. Li, A. Geiger, X. Yue, L. Chen.

NeurIPS 2025. Spotlight Paper (Top 3.2%).

- ReSim is a driving world model that enables Reliable Simulation of diverse open-world driving scenarios under various actions, including hazardous non-expert ones. A Video2Reward model estimates the reward from ReSim’s simulated future.
- The key ingredient is to co-train the world model on heterogeneous driving data including driving videos from the web, driving data with action labels, and simulated data with non-expert driving behaviors.

- **RISE: Self-Improving Robot Policy with Compositional World Model**

Jiazhi Yang, K. Lin, J. Li, W. Zhang, T. Lin, L. Wu, Z. Su, H. Zhao, Y.-Q. Zhang, L. Chen, P. Luo, X. Yue, H. Li.

In Submission.

- RISE, a scalable framework for robotic reinforcement learning *via imagination*, enabling on-policy RL without costly or risky physical interactions by learning in an imagined space.
- **Vista: A Generalizable Driving World Model with High Fidelity and Versatile Controllability**
S. Gao, **Jiazhi Yang**, L. Chen, K. Chitta, Y. Qiu, A. Geiger, J. Zhang, H. Li.
[NeurIPS 2024](#).
 - A generalizable driving world model featuring: (a) high-fidelity video prediction, (b) long-horizon future roll-out, (c) multi-modal action controllability, and (d) a generalizable reward for different actions.
- **SimScale: Learning to Drive via Real-World Simulation at Scale**
H. Tian, T. Li, H. Liu, **Jiazhi Yang**, Y. Qiu, G. Li, J. Wang, Y. Gao, Z. Zhang, L. Wang, H. Ye, T. Tan, L. Chen, H. Li.
[CVPR 2026 Oral](#).
 - SimScale, a scalable real-world simulation framework that synthesizes massive unseen driving states from existing logs to improve coverage of safety-critical and out-of-distribution scenarios.
- **Decoupled Diffusion Sparks Adaptive Scene Generation**
Y. Zhou, N. Ye, W. Ljungbergh, T. Li, **Jiazhi Yang**, Z. Yang, H. Zhu, C. Petersson, H. Li.
[ICCV 2025](#).
 - Nexus, a decoupled diffusion scene generator that improves reactivity and goal conditioning for driving scenarios, achieving 40% lower displacement error and enabling 20% closed-loop planning gains via data augmentation.
- **PlannerRFT: Reinforcing Diffusion Planners through Closed-Loop and Sample-Efficient Fine-Tuning**
H. Li, T. Li, **Jiazhi Yang**, H. Tian, C. Wang, L. Shi, M. Shang, Z. Lin, G. Wu, Z. Hao, X. Lang, J. Hu, H. Li.
[CVPR 2026](#).
 - PlannerRFT, a sample-efficient reinforcement fine-tuning framework that improves diffusion-based driving planners via closed-loop learning.
- **Delving into the Devils of Bird’s-eye-view Perception: A Review, Evaluation and Recipe**
H. Li[†], C. Sima*, J. Dai*, W. Wang*, L. Lu[†], H. Wang*, J. Zeng*, Z. Li*, **Jiazhi Yang***, H. Deng*, H. Tian*, E. Xie*, J. Xie, L. Chen, T. Li, Y. Li, Y. Gao, X. Jia, S. Liu, J. Shi, D. Lin, Y. Qiao.
[TPAMI](#).
 - A comprehensive survey and practical recipe for BEV perception, analyzing key challenges (view transformation, BEV annotations, multi-sensor fusion) and providing an actively maintained toolbox/repository.

EXPERIENCE

Shanghai AI Lab, OpenDriveLab Shanghai, China

July. 2022 – July. 2024

Full-time Researcher Advisor: Hongyang Li

End-to-end Autonomous Driving. Generative Models for Vision and Autonomous Driving.

- **First author** of the paper – GenAD, “Generalized Predictive Model for Autonomous Driving”, **Highlight Paper** on **IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2024**.
- **Co-first author** of the paper – UniAD, “Planning-oriented Autonomous Driving”, **Best Paper Award** on **IEEE Conference on Computer Vision and Pattern Recognition (CVPR), 2023**.
- **Main contributor** of the open-source UniAD codebase, garnering more than **3.5k stars**: <https://github.com/OpenDriveLab/UniAD>

SenseTime Research Shanghai, China

Nov. 2021 – July. 2022

Research Intern Advisor: Dr. Lewei Lu

Self-supervised Vision Learning. Label-efficient Detection. Occupancy and Flow Prediction.

- **Team lead** on **Waymo Challenge** 2022, Occupancy and flow prediction track, won **3rd place**.

COMPETITIONS

Participated in competitions below as **Team Lead**:

[[Waymo 2022 Challenge](#)] Occupancy and Flow Prediction track – **3rd place** 2022

- Waymo Challenge is one of the most renowned and challenging competitions worldwide in autonomous driving.

[CVPR Workshop 2021] PlantPathology – **3rd place** (out of 626 teams) 2021

[MGTV Algorithm Challenge] Musical Audio Beat Tracking – **5th place** (out of 452 teams) 2021

[Kaggle Algorithm Challenge] SETI Breakthrough Listen – Bronze medal 2021

SUBMITTED PATENTS

- [US PATENT] H. Li, L. Chen, **Jiazhi Yang**, Y. Hu, C. Sima, T. Li, L. Lu, Y. Liu, Q. Liu, J. Yan, D. Lin, Y. Qiao, X. Wang.
Method and Unified Framework System for Full-Stack Autonomous Driving. (Application Number: 18/306,516)

PROFESSIONAL SERVICE

Contributed Talk

Planning-oriented Autonomous Driving

Tsinghua University, May 2023

Pathways of Igniting World Models in Intelligent Autonomy

KUIS AI Center, Oct 2025

Reviewer

CVPR, NeurIPS, RSS, ICLR, ICCV, ECCV, AAAI, T-PAMI, etc.