Jiazhi Yang

PhD Student · Multimedia Laboratory · The Chinese University of Hong Kong
jzyang@link.cuhk.edu.hk | https://github.com/YTEP-ZHI | Google scholar

Education

The Chinese University of Hong Kong Aug. 2024 –Present

PhD Student in Information Engineering, Advisors: Xiangyu Yue and Hongyang Li

Sichuan University Aug. 2018 –July. 2022

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

Research Interests

Embodied Agents. Autonomous Driving. End-to-end Policy. Real-world Decision Making.

Visual Intelligence. Generalizable World Models. Generative Models. Foundation Vision Models.

Job 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**.

Publications

- 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. **Planning-oriented Autonomous Driving**. In IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2023**). **Co-first Author, Best Paper Award, out of 9155 submissions**.
  - Proposed a planning-oriented philosophy for the design of autonomous driving systems: Unifying perception, prediction, and planning together with end-to-end training, for safe autonomy.
- **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. **Generalized Predictive Model for Autonomous Driving**. In IEEE Conference on Computer Vision and Pattern Recognition (**CVPR 2024**). **Highlight Paper (Top 2.8%)**.

  - Built 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.
  - Established 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.

- S. Gao, **Jiazhi Yang**, L. Chen, K. Chitta, Y. Qiu, A. Geiger, J. Zhang, H. Li **Vista: A Generalizable Driving World Model with High Fidelity and Versatile Controllability**. In Annual Conference on Neural Information Processing Systems (**NeurIPS 2024**).
  - Devised a generalizable driving world model featuring: (a) High-fidelity video prediction (b) Long-horizon future rollout (c) Multi-modal action controllability (d) Generalizable reward for different actions.

- **Jiazhi Yang**, K. Chitta, S. Gao, L. Chen, Y. Shao, X. Jia, H. Li, A. Geiger, X. Yue, L. Chen. **ReSim: Reliable World Simulation for Autonomous Driving**. In arXiv: 2506.09981, Jun 2025.
  - 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.

- 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, etc. *equal contribution. **Delving into the Devils of Bird's-eye-view Perception: A Review, Evaluation and Recipe.** Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), Nov 2023.
- T. Li, L. Chen, H. Wang, Y. Li, **Jiazhi Yang** , X. Geng, S. Jiang, Y. Wang, H. Xu, C. Xu. J. Yan, P. Luo, Y. Qiao, H. Li. Graph-based Topology Reasoning for Driving Scenes. In arXiv: 2304.05277, Apr 2023.

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*

Reviewer

IEEE Conference on Computer Vision and Pattern Recognition (CVPR) *2024*

Annual Conference on Neural Information Processing Systems (NeurIPS) *2024*

International Conference on Learning Representations (ICLR) *2025*