HANCHU ZHOU

(+1)9167763625 —— zhouhanchu@hotmail.com —— Academic Page —— Linkedin

EDUCATION

University of California, Davis Sep. 2022 - Present
Ph.D. of Electrical and Computer Engineering **Davis, CA**

Zhejiang University Sep. 2018 - Jun. 2022
Bachelor of Control Science (GPA: 3.89) **Hangzhou, China**

RESEARCH INTERESTS

Machine learning; RL; Autonomous driving; Autonomous driving platform;

SKILLS

Programming: Python, C, C++, MATLAB, HTML, Markdown, C#, JavaScript
Machine Learning: JAX, TensorFlow, PyTorch, Scikit-learn, Pandas, OpenCV, LLM
Tools: Open3D, YOLO, Matplotlib, Git

PROFESSIONAL EXPERIENCE

CarDreamer: World-Model-Based Autonomous Driving Platform
Apr 2024 - Jul. 2024

Under review in IEEE IoT-J: CarDreamer

- 100+ stars open-source repository on GitHub.
- Built the first open-source platform for world-model-based autonomous driving.
- Designed multiple scenarios for training with great flexibility on modality, observability, and communication.
- Trained and evaluated the world model policy on each scenario with high efficiency and safety.

World-Model-Based Hierarchical Planning
Mar 2024 - Jun. 2024

Under review in Neurips 2024

- Proposed a two-level planning strategy that generates high-level intentions and low-level control.
- Designed an adapative training method, which ensures the balanced performance between two levels.
- Undertook extensive experiments on complex driving tasks and demonstrated its outstanding performance.

EI-Drive: Edge-Intelligent Autonomous Driving Platform
Jun. 2023 - Aug. 2024

Under review in IEEE IoT-J

- Developed a platform features transmission latency and error in cooperative perception.
- implemented the modularized pipeline as backbone, including sensing, perception, planning, and control.
- Built various scenarios and a visualization tool to illustrate the feature of edge-intelligence. Extensive experiments explored their interactions with cooperative perception.

CommWorld: Communicative World Models for Distributed RL
Feb. 2024 - May. 2024

Under review in Neurips 2024

- Propose CommWorld, the world model with lightweight information sharing, to improve prediction.
- Studied the impact of the generalization error in world model to quantify the benefits of information sharing.
- Conducted extensive experiment in autonomous driving and highlighted the promising performance.

Vehicle Planning using GPT-3.5
Sep 2023 - Dec. 2023

ECS289G course work: Github

- Collected collision-free trajectories by CARLA script as the training data for LLM.
- Fine-tuned GPT-3.5 on OpenAI fine-tuning tool with the planning examples.
- Evaluated trained model on CARLA script and analyzed the performance of planning model.