

JIAHAO ZHAN

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EDUCATION

Fudan University, Shanghai

Sept. 2022 - Present

Bachelor of Artificial Intelligence (Honor Class, Computer Science Track)

GPA: 3.93/4.0, Rank: 2/208, National Scholarship (2022 - 2023, Top 1 of the school), National Scholarship (2023 - 2024, Top 1 of the school)

Selected Courses: Mathematical Analysis (A), Linear Algebra (A), Object-oriented Programming (A), Data Structure (A), Probability and Mathematical Statistics (A), Computer Graphics A (A), Human-Computer Interaction (A), Artificial Intelligence (A), Method of Optimization (A)

RESEARCH INTERESTS

Multimodality, Computer Vision, Self-Driving, Robotics

PUBLICATION

- **Do Large Multimodal Models Cover Academic Journal Covers?**
Jin Gao, **Jiahao Zhan**, Chongxuan Li, and Dequan Wang. (To Be Submitted)
- **LLM-Powered Multi-Agent Proactive Communication System for Embodied Intelligence**
Shuaixing Chen, Lingfeng Zhou, **Jiahao Zhan**, Dequan Wang. (To Be Submitted)
- **Generalizing Motion Planners with Mixture of Experts for Autonomous Driving**
Qiao Sun*, Huimin Wang*, **Jiahao Zhan**, Fan Nie, Xin Wen, Leimeng Xu, Kun Zhan, Peng Jia, Xianpeng Lang, Hang Zhao (Submitted to ICRA 2025)

RESEARCH EXPERIENCES

Shanghai Qi Zhi Institute

May. 2024 - Present

Research Intern, advised by Prof. Hang Zhao

- **Generalizing the Motion Planners in Autonomous Driving:**
 - After participating in the CVPR 2024 Autonomous Grand Challenge, I observed that current autonomous driving planning models lack the capability to generalize to some hard cases and are difficult to scale up.
 - Optimize NuPlan’s simulation pipeline.
 - Explore Mixtral of Experts’ ability to balance different rewards in closed-loop simulation.
 - Handle the self-driving problem in a sequence modeling way and illustrate the rasterized representation’s advantage in self-driving.

Shanghai AI Lab

Mar. 2023 - May. 2024

Research Intern, advised by Prof. Dequan Wang

- **Large Multi-modal Models Benchmark:**
 - Despite the rapid development of Large Multi-modal Models (LMMs), there is still a lack of benchmarks for evaluating their comprehension of abstract concepts, particularly in the scientific domain.
 - Constructed the Multi-modal Academic Cover (MAC) Benchmark, a challenging and continuously updating benchmark that utilizes the covers and cover stories of prestigious academic journals to quantify the intelligence levels of LMMs.
 - Evaluated the capacities of state-of-the-art LMMs in understanding, interpreting, and generating academic content.
- **Efficient In-Context Learning:**
 - Due to the limitation of context length in LLMs, a demonstration selection technique is necessary to enhance prompt knowledge density.

- Proposed a Bayesian-based Prompt Selection (BPS) technique to select knowledge-intensive prompts for in-context learning.
- Explored the use of verbalized `logp` to circumvent the informational constraints encountered with LLM APIs, thereby enhancing the generalization of our method.

PROJECT EXPERIENCES

Shape Completion and Reconstruction of Sweet Peppers Challenge (ECCV workshop) Aug. 2024
Team Member

- Won the third prize.
- Constructed a point completion algorithm based on current researches.

Course Project of HCI: A Multi-modal Agent System May. 2024
Project Leader

- Developed an agent system that can hear what you hear, see what you see, and feel what you feel.
- Reduced the reacting latency to only 2 seconds and implement the interactive functions.

Intel LLM-based Application Innovation Contest Nov. 2023
Project Leader

- Developed OptiPrompt, a user-friendly framework that can automatically optimize prompts to explicit users' questions and promote LLMs' performance based on Intel BigDL platform.
- Released the prototype in the final of the competition, winning the second prize.

SKILLS

Programming Languages: C/C++, Python, Bash, Git, \LaTeX

Frameworks: Pytorch, Huggingface Transformers