

# JIAHAO ZHAN

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## EDUCATION

**Fudan University, Shanghai**

Sept. 2022 - Present

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

GPA: 3.91/4.0, 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)

**Hong Kong University of Science and Technology, Hong Kong**

Jan. 2025 - Jun. 2025

*Exchange Student in Computer Science*

## RESEARCH INTERESTS

Hybrid Generative Simulator, 3D Computer Vision, AIGC

## PUBLICATION

- **Fake it till You Make it: Reward Modeling as Discriminative Prediction**  
Runtao Liu\*, **Jiahao Zhan\***, Yingqing He, Chen Wei, Alan Yuille, Qifeng Chen. (Submitted to Neurips 2025)
- **MAC: A Live Benchmark for Multimodal Large Language Models in Scientific Understanding**  
Mohan Jiang, Jin Gao, **Jiahao Zhan**, and Dequan Wang. (COLM 2025)
- **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 (ICRA 2025)

## RESEARCH EXPERIENCES

**Stanford Vision and Learning Lab**

Jun. 2025 - Present

*Research Intern, advised by [Prof. Jiajun Wu](#)*

- **Optimization of the 4D representation in the interactive world:**
  - Improve the quality of the interactive world generation using advanced video generation models via SDS loss.

**HKUST Visual Intelligence Lab**

Jan. 2025 - Jun. 2025

*Research Intern, advised by [Prof. Qifeng Chen](#)*

- **Fake it till You Make it: Reward Modeling as Discriminative Prediction:**
  - Existing preference alignment methods rely heavily on costly human annotations or require combining multiple metrics to construct rewards, which is both expensive and suboptimal.
  - Instead, we propose to infer preferences directly from the target data distribution, eliminating the need for extensive external supervision.
  - Our method enables learning a robust reward model from minimal data, facilitating efficient sampling and RLHF optimization, also enabling multi-round GAN-like optimization.

**Shanghai Qi Zhi Institute**

May. 2024 - Jan. 2025

*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

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**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

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**Programming Languages:** C/C++, Python, Bash, Git,  $\text{\LaTeX}$

**Frameworks:** Pytorch, Huggingface Transformers