




Yifei Zhang

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EDUCATION

University of Chinese Academy of Sciences (UCAS)
Bachelor of Artificial Intelligence (Expected 2025)

Sep 2021-Present

Current GPA: 3.99/4.0 Ranking: 1/70

Visiting Undergraduate Researcher at UC Berkeley

Feb 2024-Present

COURSEWORK

Main Courses: Robotics (94), Pattern Recognition and Machine Learning (95)

Physics: Mechanics (99), Thermal Physics (97), Electromagnetics (92), Optics (96), Atomic Physics (97)

Neuroscience: Cognitive Neuroscience (91)

SELECTED PUBLICATIONS

- Qianqian Wang*, **Yifei Zhang***, Aleksander Holynski, Alexei A Efros, and Angjoo Kanazawa, “Continuous 3D Perception Model with Persistent State,” in submission.
- Yixiao Wang*, **Yifei Zhang***, Mingxiao Huo*, Ran Tian, Xiang Zhang, Yichen Xie, Chenfeng Xu, Pengliang Ji, Wei Zhan, Mingyu Ding, and Masayoshi Tomizuka, “Sparse Diffusion Policy: A Sparse, Reusable, and Flexible Policy for Robot Learning,” in *Conference on Robot Learning (CoRL)*, 2024.
- **Yifei Zhang**, Huan-ang Gao, Zhou Jiang, and Hao Zhao, “Dual-frame Fluid Motion Estimation with Test-time Optimization and Zero-divergence Loss,” in *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
- **Yifei Zhang**, Hao Zhao, Hongyang Li, and Siheng Chen, “FastMAC: Stochastic Spectral Sampling of Correspondence Graph,” in *IEEE Computer Vision and Pattern Recognition (CVPR)*, 2024.

RESEARCH EXPERIENCES

3D Perception Model | *Instructed by Angjoo Kanazawa, Alexei A. Efros, UC Berkeley* August. 2024 – Present

- Field: 3D Vision
- **Co-leading** the development process, including large-scale model training, and extensive experiments.
- Developed a unified model for diverse 3D tasks, including 3D/4D reconstruction and novel geometry synthesis.

Sparse Diffusion Policy | *Instructed by Masayoshi Tomizuka, UC Berkeley* Feb. 2024 – June. 2024

- Field: Robotic Learning
- **Co-First Authored** and achieved acceptance by **CoRL 2024**.
- Expanding diffusion-policy to robot multi-task learning and continual learning.
- **Co-led** task integration and exploration of continual learning capabilities within the framework.

FastMAC | *Instructed by Hao Zhao, Institute for AI Industry Research, Tsinghua University* May. 2023 – Nov. 2023

- Field: 3D Point Cloud Understanding
- **First-Authored** and achieved acceptance by **CVPR 2024**.
- Innovated the *FastMAC* algorithm, achieving real-time processing speeds with minimal performance degradation.
- Spearheaded the research from conception to publication, leading a team of 4 in experiment design and managing the writing process, resulting in the paper’s high praise and acceptance.

DECROB | *Instructed by Hao Zhao, Institute for AI Industry Research, Tsinghua University* May. 2023 – Oct. 2023

- Field: AI4Science, Physics, Point Tracking
- Led the project as the **first-author** on a novel self-supervised framework for 3D Particle Tracking Velocimetry, currently **accepted by NeurIPS 2024**.
- As the **first author**, led through the research progress, from initial concept to preprint submission, achieving groundbreaking results and recognition.

HONORS AND AWARDS

SenseTime Scholarship (25 winners nationwide)	July, 2024
China National Scholarship (Top 0.01%)	Dec. 2023 & Dec. 2024
First-Level Scholarship of UCAS (Top 1% in UCAS)	Every Year
National First Prize in APMCM (Top 5% in China)	Dec. 2022
Honorable Mention in Mathematical Contest in Modeling (Top 10% around the world)	Feb. 2023
3V3 National Second Prize in RoboMaster University League	April. 2023

OTHER PROJECTS

Industrial Showroom Setup <i>Member</i>	Fall, 2023
In charge of display systems for Tsinghua University's showroom, enabling remote control of autonomous vehicles, resulting in improvement in system efficiency through advanced Unity and ROS communications .	
iFLYTEK 10.24 Industrial Big Model Launch Event <i>Member</i>	Fall, 2023
Led debugging and optimization of robotic arm hardware drivers for the iFLYTEK 10.24 launch, contributing to a successful product demonstration.	
Development of Robotic Arm & Intelligent Vehicle System <i>Individual Project</i>	Fall, 2023
Designed and constructed a fully functional robotic arm mounted on a four-wheel vehicle for a Robotics Seminar course project, demonstrating innovative engineering solutions and automation capabilities.	
Cognitive Behavioural Prediction <i>Leader</i>	Fall, 2023
Led a Cognitive Neuroscience course project focusing on cognitive behavioral prediction , developing multi-modal fusion algorithms that predict IQ patterns, detailed documentation available on Github.	
Autonomous Driving <i>Member</i>	Summer, 2023
Constructed an autonomous robot capable of complex environment navigation for a summer project at Tsinghua University. Led the development and implementation of sophisticated mapping and navigation algorithms.	

VOLUNTEER ACTIVITIES

Volunteer Academic Q&A Counseling <i>Member</i>	2022 – 2023
Served as an Academic Peer Mentor, offering vital academic counseling for more than 1.5 years, significantly improving the younger students' understanding of complex subjects.	
Covid-19 Hospital Volunteering <i>Member</i>	July, 2022
Volunteered at a local hospital during the COVID-19 epidemic, providing essential guidance and support to over 200 patients, facilitating efficient healthcare delivery and enhancing patient satisfaction during critical times.	

SKILLS AND SELF-EVALUATION

Proficient in English, evidenced by a TOEFL score of 106(R28, L30, S23, W25) tested on Sep 21, 2024.

Expert in programming with extensive experience in CUDA, C/C++, and Python.

Abundant Experience in Deep Learning, leveraging Pytorch for innovative projects and familiar with development tools including Git/GitHub, Ubuntu, VS Code, CLion/PyCharm.

Good at Mathematics and Physics.

Good Mathematic Grades: Linear Algebra(95), Advanced Algebra(96), Mathematical Analysis(96).
Good Physic Grades: Mechanics(99), Thermal Physics(97), Electromagnetics(92), Optics(96), Atomic Physics(97). All courses are at the **most advanced** level.