Xunzhe Zhou

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EDUCATION

Fudan University   Shanghai, China
- B.S. in Computer Science and Technology, GPA 3.55/4.00 (Average grade 90/100)   2021.09 - now
- Natural Science Experimental Class, GPA 3.58/4.00   2020.09 - 2021.06

Thesis: *Skill-level generalization in imitation-based robotic manipulation models (A-level Thesis, Top 20%).*

Honor&Awards: *Second (Top 10%), Third (Top 25%) Prize of the Scholarship for Outstanding Students at Fudan University; Winner of the Top Talent Award in Computer Science ("拔尖计划"学生 Top 10%).*

University of California, Berkeley   Berkeley, CA, USA
- Exchange student**,** Department of EECS, GPA 4.00/4.00   2023.08 - 2023.12

Graduate courses: CS282A Deep Learning, EECS227A Optimization; ***Undergraduate course:*** CS188 *Artificial Intelligence.*

PUBLICATIONS (* denotes equal contribution)

- P. Zhou, W. Yao, Q. Luo, **Xunzhe Zhou**, Y. Yang, "Hyper-GoalNet: Goal-Conditioned Manipulation Policy Learning with HyperNetworks", accepted by *NeurIPS 2025*.
- J. Zhou, R. Wu, Y. Liu, Y. Hou, **Xunzhe Zhou**, C. Yu, L. Zhong, L. Shao, "Bi-Adapt: Few-shot Bimanual Adaptation for Novel Categories of 3D Objects via Semantic Correspondence", in submission to *ICRA 2026*.
- J. Chen*, C. Yu*, **Xunzhe Zhou***, T. Xu, Y. Mu, M. Hu, W. Shao, Y. Wang, G. Li, L. Shao, "EMOS: Embodiment-aware Heterogeneous Multi-robot Operating System with LLM Agents", accepted by *ICLR 2025*. (arXiv:2410.22662)
- Q. He, J. Zeng, W. Huang, L. Chen, J. Xiao, Q. He, **Xunzhe Zhou**, J. Liang, Y. Xiao "Can Large Language Models Understand Real-World Complex Instructions?", accepted by *AAAI 2024*. (arXiv:2309.09150v2)
- H. Sun*, **Xunzhe Zhou***, R. Cao*, J. Hou, C. Guan, and S. Leng, "Reservoir computing as digital twins for controlling nonlinear dynamical systems", in submission to *Nonlinear Dynamics.*

RESEARCH EXPERIENCE

School of Computing, National University of Singapore   Singapore, Singapore
Advisor: Prof. Lin Shao   2024.05 – 2024.12
- Constructed a heterogeneous multi-robot collaborating system with LLM agents in *Habitat-lab*. I was responsible for from low-level robot actions to high-level multi-agent task planning. I also constructed the *Habitat-MAS* benchmark dataset.
- Bi-manual adaptation for novel categories of 3D objects with affordance extracted from vision foundation models.
- Co-first authored the paper *EMOS: Embodiment-aware Heterogeneous Multi-robot Operating System with LLM Agents*.

Shanghai Key Laboratory of Data Science, Fudan University   Shanghai, China
Advisor: Prof. Yanghua Xiao   2023.06 - 2023.08
- Conducted a benchmark to evaluate LLMs' capabilities of real-world complex instructions following. I was responsible for 1) constructing the dataset, 2) designing the evaluation criteria, and 3) evaluating the LLM models.
- Drafted project proposal *A Practical Benchmark for Evaluating Large Language Models' Understanding of Complex Instructions under Hard Constraints* to apply for the *National Natural Science Foundation of China* (youth projects).
- Co-authored the paper *Can Large Language Models Understand Real-World Complex Instructions?*

Institute of AI and Robotics, Fudan University   Shanghai, China
Advisor: Prof. Siyang Leng   2022.11 - 2023.05
- Constructed an *Echo State Network* as the digital twin to predict and control the behavior of nonlinear dynamical (chaotic) systems. I was responsible for 1) constructing the model, 2) conducting experiments, and 3) revising the paper.
- Co-first authored the paper *Reservoir Computing as Digital Twins for Controlling Nonlinear Dynamical Systems*.

WORK EXPERIENCE

TranscEngram   Shenzhen, China
Mentors: Prof. Yanchao Yang and Prof. Yi Ma   2025.02 - now
- Multi-task generalization in robot manipulation.
- Robot manipulation policy learning from human videos.
- Goal-conditioned manipulation policy learning with HyperNetworks.

Shanghai Artificial Intelligence Laboratory   Shanghai, China
Mentors: Dr. Biqing Qi and Dr. Yan Ding   2024.12 - 2025.02
- Scaling Laws in Imitation Learning for robot manipulation skill-level generalization.
- Open world mobile manipulation with an end-to-end vision language model.

SELECTED PROJECTS

[Mobile Manipulation and Hierarchical Task Planning](#)   Fudan University, China

Advisors: Prof. Yanwei Fu and Prof. Xiangyang Xue   2024.03 - 2024.05

- Constructed a mobile manipulation system with the robot assembled with *Franka Panda* arm and *Hermes* mobile base.
- I was responsible for constructing 1) semantic grasping pose estimation, 2) semantic mobile base navigation, and 3) hierarchical task planning. The follow-up work: *TaMMa* (Hou et al.) was accepted by *CoRL 2024*.

[Resolving Knowledge Conflicts in Vision-Language Models](#)   Fudan University, China

Advisor: Prof. Xiangyang Xue   2024.03 - 2024.04

- Constructed a small-scale VQA dataset involving knowledge conflicts from the Internet or generated with *DALL·E 3*.
- Evaluated 8 SOTA VLMs on the dataset, and resolved knowledge conflicts in *LLaVA-1.5* with contrastive decoding.

[Neural Style Transfer Based on Fine Tuning Vision Transformer](#)   UC Berkeley, USA

Advisor: Prof. Anant Sahai   2023.11 - 2023.12

- Replaced the content and style encoders of $StyTr^2$ with fine-tuned *ViT* to improve the task of *Neural Style Transfer*.
- Leveraged a two-stage strategy: First freeze pre-trained *ViT*, only train decoders; Then wrap *LoRA* for joint training.

HONOR & AWARDS

- Winner of the Top Talent Award in Computer Science ("拔尖计划"学生 Top 10%)   2025
- Third prize in China Undergraduate Mathematical Contest in Modeling (Top 30%)   2024
- Third prize of scholarship in Outstanding Students (Top 25%)   2023
- Second prize of scholarship in Outstanding Students (Top 10%)   2021
- Second award in the National High School Mathematics League (Top 12%)   2019
- Honor roll of distinction certificate in The Mathematics League (World Top 8%)   2016
- Champion of Soccer League, Fudan University   2023 & 2024 & 2025

SERVICE

- Reviewer: ICLR 2025   2024
- Fudan University Admissions Team at Guizhou Province   2022
- Covid-19 Voluntary Service   2022
- Guizhou Province Voluntary Service   2019

SKILLS

- Relevant coursework: Deep Learning, Artificial Intelligence, Machine Learning, Deep Reinforcement Learning, Convex Optimization, Intro to Robotics, Data Mining.
- Programming Languages: Python, C/C++, ROS, Matlab, Verilog.
- Software: Pytorch, Git, LaTeX, COLMAP.
- Real Robots: RealMan, WidowX-250S, Franka Emika Panda, xArm, Kinova Gen2, HERMES.
- AI Models: VLMs, LLMs, Diffusion Models, NeRF, 3DGS.
- Simulator: Habitat-lab, Maniskill, Gazebo, IssacSim, PyBullet, SAPIEN, MuJoCo, AI2-THOR, ThreeDWrold.

STANDARDIZED TESTS

- IELTS: Overall 7.0 (Listening 6.5+Reading 7.5+Writing 6.5+Speaking 6.5).
- Duolingo: Overall 120 (Literacy 120+ Comprehension 125+ Conversation 105+ Production 90).