Xunzhe Zhou

(+86)180-9600-2356 — xunzhe_zhou@outlook.com — zhouxunzhe.github.io

EDUCATION

School of Computer Science, Fudan University Shanghai, China

- B.S. in Computer Science and Technology 2020.09 - now

Department of Electrical Engineering and Computer Sciences, UC Berkeley Berkeley, CA, USA

- Exchange student at EECS Department, GPA 4.00/4.00 2023.08 - 2023.12

PUBLICATIONS (* denotes equal contribution)

- R. Cao*, **Xunzhe Zhou***, J. Hou, C. Guan, S. Leng, "Reservoir computing as digital twins for controlling nonlinear dynamical systems." submitted to *Information Sciences*.
- Q. He , J. Zeng , W. Huang , L. Chen , J. Xiao , Q. He , **Xunzhe Zhou** et al. "Can Large Language Models Understand Real-World Complex Instructions?" accepted by *AAAI 2024*.

RESEARCH EXPERIENCE

Research Assistant, School of Computing, National University of Singapore 2024.05 - now

Advisor: Prof. Lin Shao

- Research embodied task planning through visual2PDDL generation.
- Propose the project framework and now in progress.

Research Assistant, School of Data Science, Fudan University 2024.01 - now

Advisor: Prof. Yanwei Fu

- Research mobile robot task and motion planning using foundation models in real-world scenarios.
- Propose a survey and the framework of the whole system.
- Construct the real-world workspace and the mobile robot system.
- Implement the mobile robot and workspace simulation and Franka-ROS manipulation.
- Implement the grasping and planning module of the system.
- *recent future work*: instance-level 6D pose estimation.

Research Assistant, School of Data Science, Fudan University 2024.01 - now

Advisor: Prof. Xiangyang Xue

- Research VLMs' hallucinations in knowledge conflicts.
- Propose the knowledge conflicts in VLMs and construct a dataset to validate our hypothesis.
- Construct the framework to systematically test knowledge conflicts.
- Build a framework to solve knowledge conflicts, and now in the automatic experimental progress.

Research Assistant, Shanghai Key Laboratory of Data Science, Fudan University 2023.06 - 2023.08

Advisor: Prof. Yanghua Xiao

- Research LLMs' understanding of real-world complex instructions.
- Propose CELLO Benchmark, with a comprehensive set of features for complex instructions, facilitating both dataset construction and evaluation criteria design.
- Contribute to the whole framework, conducting dataset construction, and evaluating system part.
- Draft the proposal of project *A Practical Benchmark for Evaluating Large Language Models' Understanding of Complex Instructions under Hard Constraints* for applying National Natural Science Foundation of China.
- Co-author the paper *Can Large Language Models Understand Real-World Complex Instructions?*, accepted by *AAAI 2024*.

Research Assistant, Institute of AI and Robotics, Fudan University 2022.11 - 2023.05

Advisor: Prof. Siyang Leng

- Research reservoir computing (RC) in nonlinear dynamical systems control.
- Construct and control the RC as the digital twin of an unknown complex system using only observational data.
- Build the code part of the whole framework. Implemented different chaotic systems with different dimensions and types and their reservoir computing as the digital twins.
- Conduct different experiments on the prediction, control, and robustness of RC.
- Co-first author the paper *Reservoir computing as digital twins for controlling nonlinear dynamical systems*, submitted to *Information Sciences*.

GLOBAL EXPERIENCE

Department of Electrical Engineering and Computer Sciences, UC Berkeley 2023.08 - 2023.12

- Study CS182/282A Deep Learning, EECS127/227A Optimization Models, CS188 Intro Artificial Intelligence, and audit CS285 Deep Reinforcement Learning.
- Conduct course project *Neural Style Transfer Based on Fine Tuning Vision Transformer*.
- Contribute to the encoders of the NST model.
- Author the encoder, introduction, and reference part of the essay.

AWARDS

- Second prize of scholarship in Outstanding Students at Fudan University 2021.
- Third prize of scholarship in Outstanding Students at Fudan University 2023.
- Second award in National High School Mathematics League 2019.
- Honor roll of distinction certificate in The Mathematics League in 2016 (Top 8%).
- 1st prize in Fudan Soccer League in 2023.

SKILLS

- Relevant Coursework: Deep Learning (CS182/282A@Berkeley), Optimization Models (CS127/227A@Berkeley), Reinforcement Learning (CS285@Berkeley), Artificial Intelligence (CS188@Berkeley), Machine Learning, Data Mining.
- Programming Languages: Python, C/C++, Matlab, Verilog.
- Software: Pytorch, COLMAP, ROS, Git, LATEX, IssacGym, Unity, Blender.
- Robots: Franka Emika Panda, Kinova Gen2, HERMES.

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).