Yiyang LING

✉ Email | ⌂ Homepage | 🐙 Github

Area of Interest

My research interest lies in robotics and computer vision. Currently, I am working on generating rich manipulation tasks for training language-conditioned multitask policies with Large Language Models.

Education

Shanghai Jiao Tong University   *Shanghai, China*
Major in Computer Science (ACM Honors Class)   *Sept 2020 - Present*
- **Courses:** Scientific computing (99/100), Math Tools in Computer Science (99/100), Computational Complexity (98/100), Deep Learning and Its Applications (97/100), Model Checking (96/100)

Research Experience

University of California San Diego   *San Diego, US*
Visiting Undergraduate, advised by Prof. **Xiaolong Wang**   *Jun 2023 - Present*
- Working on automatically generating diverse simulation environments and rewards by exploiting the grounding and coding ability of Large Language Models.

Shanghai Jiao Tong University   *Shanghai, China*
Research Assistant, advised by Prof. **Cewu Lu**   *Sept 2022 - Feb 2023*
- Focused on few-shot or zero-shot methods for detection of deformable objects.

Course Projects

Quantum Inspired Tensorized Cross-Network Embedding
Project for Deep Learning and Its Application   *Fall 2022*
- Proposed a pioneering and efficient tensorized cross-network embedding technique founded on contrastive learning.

Compiler for Mx*
Project for Compiler Design and Implementation   *Spring 2022*
- Designed and implemented a compiler from Mx*, a simplified programming language similar to C++, to RV32I instructions.

RISC-V CPU
Project for Computer Architecture   *Fall 2021*
- Designed and implemented a five-stage CPU pipeline supporting most part of RV32I Instruction set using Verilog.

Publications

GenSim: Generating Robotic Simulation Tasks via Large Language Models
   Lirui Wang, **Yiyang Ling***, Zhecheng Yuan*, Mohit Shridhar, Chen Bao, Yuzhe Qin, Bailin Wang, Huazhe Xu, Xiaolong Wang
   In submission
- Designed a novel simulation task generation pipeline through Large Language Models to generate achievable and diverse manipulation tasks.
- Leveraged the generated tasks for training multitask policies and evaluating their generalization capabilities in both simulation and the real world.

TC-CNE: Scalable and Efficient Contrastive Cross-Network Embedding via Tensorized Representation
   Hao Xiong, **Yiyang Ling**, Junchi Yan
   In submission
- Proposed a scalable tensorized cross-network embedding method based on contrastive learning by introducing the utilization of CP Decomposition and intra/inter-network sub-embeddings.
- Achieved to save storage space and accelerate embedding learning simultaneously in a unified training pipeline.

Work Experience

Shanghai Jiao Tong University
Teaching Assistant of **Algorithm Design and Analysis**

Shanghai, China
Spring 2023

Awards and Honors

2020-2023	**Scholarship**, Zhiyuan College Honors Scholarship (Top 5% in SJTU each year)	*Shanghai Jiao Tong University*
2020-2023	**Scholarship**, Scholarship for Outstanding Undergraduates	*Shanghai Jiao Tong University*

Skills

Programming	Python, C++, Rust, Java, Verilog.
Miscellaneous	LaTeX, SQL, Git, Matlab.
Language	English, Chinese.