

Yiyang LING

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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

Awards and Honors

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| 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

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