

# 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

## CoRL 2023 Workshop

Reviewer

## Shanghai Jiao Tong University

Teaching Assistant of **Algorithm Design and Analysis**

Spring 2023

## 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**  $\text{\LaTeX}$ , SQL, Git, Matlab.

**Language** English, Chinese.