Yiyang LING

✉ Email | 🏠 Homepage | Github | 🎓 GoogleScholar

Area of Interest

My research interest lies in robotics and computer vision. Currently, I am working on generating robotic simulation tasks with Large Language Models and Vision Language Models, in order to scale up simulation benchmark and distill knowledge to robotic policies.

Education

Shanghai Jiao Tong University   *Shanghai, China*
Bachelor in Computer Science   *Sept 2020 - Jun 2024 (Expected)*
- Member of ACM Honors Class
- **Selected 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 Exploiting Large language models' grounding and coding ability and distilling knowledge to robotic policies.
- Designed a novel simulation task generation pipeline through Large Language Models and Vision Language Models to generate achievable and diverse manipulation tasks.
- Scaled up simulation benchmark and automated domain randomization and expert demonstrations.
- Leveraged the generated tasks for training multitask policies and evaluating their generalization capabilities in both simulation and the real world.

Shanghai Jiao Tong University   *Shanghai, China*
Undergraduate Research Assistant, advised by Prof. **Cewu Lu**   *Sept 2022 - Feb 2023*
- Engaged in an in-depth study of foundational concepts in computer vision and learned a solid theoretical framework for practical applications and research advancements.
- Conducted research focused on developing universal self-supervised 3D keypoint detectors to enhance the detectors' ability to reconstruct original object shapes.
- Proposed improvements to the foundational voting scheme of the CPPF framework, a category-level point pair feature voting method.

Course Projects

Quantum Inspired Tensorized Cross-Network Embedding
Project for Deep Learning and Its Application   *Fall 2022*
- 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.

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
   Under Review & Best Paper Award in LangRob Workshop @ CoRL 2023

TC-CNE: Scalable and Efficient Contrastive Cross-Network Embedding via Tensorized Representation
   Hao Xiong, **Yiyang Ling**, Jianhao Huang, Junchi Yan
   Under Review

Work Experience

CoRL 2023 Workshop
Reviewer
Shanghai Jiao Tong University
Teaching Assistant of **Algorithm Design and Analysis** *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.