Yanting Yang

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EDUCATION

Zhejiang University   09/2022 - Present
Master of Engineering in Software Engineering
Grade Point Average (GPA): 89.71/100
Advised by Prof. Xiaofei He

Wuhan University of Technology   09/2018 - 06/2022
Bachelor of Engineering in Software Engineering
GPA: 91.94/100, Ranking: 11/279
First-Class Scholarship and Outstanding Student
Core Modules: *Data Structures, Computational Composition and Architecture, Operating Systems, etc.*

RESEARCH INTERESTS

My research interests lie in enhancing robots' generalization capabilities to perform effectively across diverse, open-world tasks. Specifically, I focus on leveraging foundation models and large-scale internet data to advance robotic systems in perception, planning, and control. My work has involved adapting video-language model to develop a generalizable reward function. Additionally, I am keen on designing embodied agents that can interact proficiently with the physical world while exhibiting informed reasoning and planning capabilities.

PUBLICATION

Adapt2Reward: Adapting Video-Language Models to Generalizable Robotic Rewards via Failure Prompt
<u>**Yanting Yang**</u>*, Minghao Chen*, Qibo Qiu, Jiahao Wu, Wenxiao Wang, Binbin Lin, Ziyu Guan, Xiaofei He
European Conference on Computer Vision (ECCV), 2024

AutoManual: Generating Instruction Manuals by LLM Agents via Interactive Environmental Learning
Minghao Chen, Yihang Li, <u>**Yanting Yang**</u>, Shiyu Yu, Binbin Lin, Xiaofei He
Conference on Neural Information Processing Systems(NeurIPS), 2024

Multimodal Pretraining, Adaptation, and Generation for Recommendation: A Survey
Qijiong Liu, Jieming Zhu, <u>**Yanting Yang**</u>, Quanyu Dai, Zhaocheng Du, Xiao-Ming Wu, Zhou Zhao, Rui Zhang, Zhenhua Dong
ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2024

Discover: Disentangled Music Representation Learning for Cover Song Identification
Jiahao Xun, Shengyu Zhang, <u>**Yanting Yang**</u>, Jieming Zhu, Liqun Deng, Zhou Zhao, Zhenhua Dong, Ruiqi Li, Lichao Zhang, Fei Wu
ACM Special Interest Group on Information Retrieval (SIGIR), 2023

RESEARCH EXPERIENCE

Research on Foundation Models in Embodied Agent   01/2023 – Present
ZheJiang University

- Focuses on improving the generalization capabilities of embodied agents, such as robots, by leveraging large-scale internet data and foundation models, including large language models (LLMs) and vision-language models (VLMs). I have contributed to two key works: one centered on developing generalizable reward functions, and the other on designing dynamic, rule-based learning frameworks to enhance agent performance across diverse environments.
- Adapted video-language models with learnable failure prompts to enhance robots' ability to distinguish between successful and failed executions, demonstrating outstanding generalization to new environments and instructions for robot planning and reinforcement learning. Published a paper as the co-first author in ECCV 2024.
- Introduced AutoManual, a framework enabling LLM agents to autonomously adapt and enhance their understanding of diverse environments by categorizing and optimizing knowledge rules online, achieving outstanding performance on ALFWorld benchmarks. Submitted a paper as the third author in NeurIPS 2024.

Research on Multimodal Models for Recommendation and Retrieval 09/2022 – 12/2021

Zhejiang University

- Explored the latest advancements and future trajectories in multimodal pretraining, adaptation, and generation techniques, assessing their applications in enhancing recommender systems. Discussed current challenges and opportunities for future research in this dynamic domain. Published a paper as the third author in KDD 2024.
- Introduced DisCover framework for cover song identification, effectively disentangling version-specific and invariant factors using Knowledge-guided and Gradient-based modules, achieving superior performance benchmarks in music information retrieval. Published a paper as the third author in SIGIR 2023.

Awards and Honors

China Undergraduate Mathematical Contest in Modeling (CUMCM 2020), Province First Prize, 10/2020
China Robotics and Artificial Intelligence Competition, Third Prize, 08/2021
National College Student Information Security Competition, Honorable Mention, 08/2021
The First Prize Scholarship, Wuhan University of Technology
Pacemaker to Merit Student, Wuhan University of Technology
Outstanding Graduates, Wuhan University of Technology

Skills

Languages: Java, Python, C/C++, SQL
Simulation Frameworks: Pybullet, Meta-World
Libraries: NumPy, pandas, Matplotlib, Pytorch, TensorFlow, gym
English: IELTS 7.0 (listening: 7.5, reading: 8.5, writing: 6.5, speaking: 6.0)