Yaoyu He

Shanghai heyy2022@shanghaitech.edu.cn (+86) 133 6107 7929 Eniverz

Education

ShanghaiTech University, Shanghai, China, Computer Science 2022.09 - 2026.06 (Expected)

- GPA: 3.59/4.0
- Core GPA: 4.0/4.0
- **Coursework:** Computer Architecture(GPA: 4.0), Machine Learning(GPA: 4.0), Deep Learning(GPA: 4.0), Artificial Intelligence(GPA: 4.0), Computer Vision(GPA: 4.0)

Research and Work Experience

LumiAni Technology Co., Ltd Developer and Researcher 2023.06 - 2024.07

- Developed and optimized stable diffusion plugin for 3D reconstruction pipeline
- Apply Colmap for camera calibration and 3D Gaussian Splatting for object point cloud reconstruction, and compared with NeRF/NeuS2
- Design LLM-based prompt engineering strategies to automate labeling and analysis of rodent behavior data

Shanghai Elan Smart Sense Information Technology Co.,LTD. 2024.07 - 2025.01

- Independently responsible for the construction and debugging of LLM modules, using Qwen, flan-t5, gpt2 and other large language models for debugging. Implemented a conversion module that converts IMU semantic information into LLM semantic space.
- Use LoRA to fine-tune and optimize the large language model, and use DPO human preferences to optimize the output fof the large language model
- Processing 30,000+ data entries by aligning text, SMPL motion, and IMU data while performing IMU data cleaning
- Lead the website construction part, independently design the website architecture, and lead other students to complete the website construction

Shanghai Jiaotong RL^2 lab 2025.02 - now

- Integrating the G1 humanoid robot into the Robosuite framework with a three-fingered gripper implementation
- Implement PPO with curiosity-driven exploration for robot skill acquisition, enabling autonomous adaptation to unseen physical environments through intrinsic reward mechanisms aligned with embodied intelligence principles
- Investigate VLA for semantic-aware robotic grasping, leveraging multimodal reasoning to interpret open-vocabulary commands and improve task generalization in real-world scenarios

Publications

Sophia-in-Audition: Virtual Production with a Robot Performer 2024.02

Taotao Zhou, Teng Xu, Dong Zhang, Yuyang Jiao, Peijun Xu, ***Yaoyu He***, Lan Xu, Jingyi Yu

2402.06978

Projects

Mojito: LLM-Aided Motion Instructor with Jitter-Reduced Inertial Tokens Mojito

- Using VQ-VAE-based tokenizer, mitigating noise and drift
- Aligned inertial tokens with LLM semantics, enabling real-time multimodal motion analysis and interactive feedback

Chinese Checkers AI Agent Chinese Checkers

- Developed hybrid RL agent combining Approximate Q-learning with Monte Carlo Tree Search

- Implemented neural heuristic evaluator using self-play reinforcement learning

Coursebench coursebench-frontend

- Develop a website about the course selection page

Technologies

Languages: Python, C++, C, JavaScript, Typescript, Rust, Java, C#,

Technologies: PyTorch, Mujoco, Gym, Qt, Unity, React, Vue, SpringBoot, Tauri