

MengYing Lin

Georgia Institute of Technology, MS in Robotics, College of Computing

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Education

Bachelor in Computer Science, University of Chinese Academy of Science Sept 2020-June 2024, GPA: 3.88/4 (13/126)
Exchange student, University of California, Berkeley Jan 2023-Aug 2023, GPA: 4/4
MS in Robotics (College of Computing), Georgia Institute of Technology Aug 2024-Present, GPA: NA

Research Experiences

Student Researcher, UC Berkeley

2023.03-2023.07(On-site)

- Collaborating with Yu Sun, worked on adapting model-based policy to environments with varying physical attributes.
- Integrated the derivative API of Mujoco into the backward process to enable gradients to be passed to policy model, given reward function conditioned on observation.
- Trained an observation-affine model to calibrate the transition model based on immediate past data, tune the old policy based on the refined observation with MPC.

Student Researcher, National Key Laboratory of Multimodal Artificial Intelligence Systems of the Institute of Automation

2023.08-2024.02, 2024.08-2024.10(Hybrid)

- Guided by Professor Dongbin Zhao and Associate Professor Yaran Chen of the Institute of Automation, explore efficient navigation planning by tapping into the object affinities understanding of large language model (LLM).
- Design a framework dynamically combining semantic understanding of LLMs with learned affinities from training environment, compatible with both metric-map-based and topological-graph-based policies.
- Improve the efficacy and generalization ability of navigation systems in both AI-2THOR and Habitat environments.
- Ongoing: Transfer the robotic system from simulation to real world. (Manuscript in preparation.)

Research Intern, Institute for AI Industry Research, Tsinghua University

2024.03-2024.10(Hybrid)

- Guided by Zike Yan, working on multi-modal lifelong navigation with neural field.
- Adopt experience replay-based continual learning for online grounding high-dimensional semantic features into neural radiance field, providing universal guidance for goals specified by different modalities.
- Extract graph from dense field for efficient path planning, designing a navigation strategy that offers instance-wise semantic guidance and considers uncertainty and safety. (Manuscript in preparation.)

Projects

Human neck pose evaluation

- Capture neck posture of users with Lightweight Openpose and OpenCV and notify users when their postures might potentially pose a threat to their long-term physical health.
- Enabled personalized settings and implemented a gaming module to guide real-time neck relaxation.
- 90% out of 55 people reported improvements in neck health using the system.

Course Material Co-developer, the Institute of Computing Technology of Chinese Academy of Sciences

- Collaborated in designing course experiments for AI Computing Systems lectures developed by Professor Yunji Chen.
- Contributed to writing detailed experiment documents for coursebook development, encompassing background knowledge and

step-by-step instructions.

- The outcomes will be utilized across approximately 100 universities in China.

Honors and Awards

UCAS Excellence Scholarship(2021, 2022, 2023)

UCAS Merit Student(June 2020, June 2021, June 2022, June 2023)

UCAS Student Organization and Involvement Awards (May, 2021)

2021 Nationwide University Student Competition Five Minute Research Presentation 2nd Prize

2021 FLTRP-ETIC Cup" English Public Speaking Contest 3rd Prize

2021 "FLTRP-ETIC Cup" English Reading Contest 2nd Prize

Art in Science Creation Competition of University of Chinese Academy of Science 3rd Prize (Dec, 2021)

2022 "FLTRP-ETIC Cup" English Reading Contest 1st Prize

2022 RoboMaster University League 3v3 Match 3rd Prize

Technical Skills

Languages: Python, C, C++, Java, Shell script, Assembly, Verilog.

Tools: Git, Vim, Cmake, Anaconda, Docker, Vivado.

API/Framework: PyTorch, ROS, Habitat-sim, Mujoco, Alfred.

Extracurricular Involvement

Peer Tutoring Role, 2021.09-2024.06

- Conduct peer tutoring for several semesters, covering both math and CS courses such as Linear Algebra, Calculus, Operating Systems and Computer Architecture.
- Conduct question-and-answer sessions, assist in the creation of personalized study plan and recommend supplementary resources, empowering peers in their coursework.

President of UCAS WINGS Dancing Club, 2021-2022

- Led a dance club of 100+ members, one of the highest-rated student associations.
- Orchestrated and coordinated dance events and facilitated on-campus dance workshops by inviting dancers from reputable dance studios.
- Honored with Excellent Individual in Student Associations in UCAS (10 students annually).