

Yiyuan Lee

Rice University

Ph.D. Student in Computer Science (Robotics)

📧 leeyiyuan.info · ✉ yiyuan.lee@rice.edu

EDUCATION

Rice University Doctor of Philosophy (Ph.D.) in Computer Science Advisor: Dr. Lydia Kavraki	2021-Present GPA: 4.00/4.00
National University of Singapore Bachelor of Computing (Honours) in Computer Science Advisor: Dr. David Hsu	2017-2021 GPA: 4.75/5.00

EXPERIENCE

Kavraki Lab · Graduate Student <i>Rice University</i> · Advisor: Dr. Lydia Kavraki	2021-Present Houston, TX, USA
<ul style="list-style-type: none">• Investigated physics simulators as an implicit transition system for task and motion planning [5].• Applied modern methods to optimize samplers for sampling-based motion planners end-to-end [4].	
Samsung AI Center · Research Intern <i>Samsung Research America</i> · Supervisors: Dr. Jinwook Huh, Dr. Volkan Isler	2023-Present New York City, NY, USA
<ul style="list-style-type: none">• Integrating deep learning and motion planning for robotics applications.	
Adaptive Computing Laboratory · Undergraduate Researcher <i>National University of Singapore</i> · Advisor: Dr. David Hsu	2019-2021 (2 yrs) Singapore
<ul style="list-style-type: none">• Developed a novel framework [2] to optimize macro-actions for POMDP planners end-to-end.• Developed a traffic simulator [1, 3] that extends CARLA with complex traffic participants.	
Institute for Infocomm Research · Research Intern <i>Agency for Science, Technology and Research</i> · Supervisor: Dr. Yan Wu	2019 (3 mos) Singapore
<ul style="list-style-type: none">• Investigated deep learning approaches to classifying materials based on tactile sensor data.	
Advanced Robotics Centre · Research Engineering Intern <i>National University of Singapore</i> · Supervisor: Dr. Marcelo H. Ang Jr.	2018-2019 (1 yr) Singapore
<ul style="list-style-type: none">• Maintained electrical and software (ROS) systems for autonomous scooters.• Implemented state estimation and spatiotemporal navigation algorithms.	

PUBLICATIONS

- [6] **Y. Lee**, K. Lee, P. Cai, D. Hsu, and L. E. Kavraki. “The Planner Optimization Problem: Formulations and Frameworks”. In *arXiv*, 2023. DOI: 10.48550/ARXIV.2303.06768.
- [5] **Y. Lee**, W. Thomason, Z. Kingston, and L. E. Kavraki. “Object Reconfiguration with Simulation-Derived Feasible Actions”. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2023.
- [4] **Y. Lee**, C. Chamzas, and L. E. Kavraki. “Adaptive Experience Sampling for Motion Planning using the Generator-Critic Framework”. *IEEE Robotics and Automation Letters (RA-L)*, 2022.
- [3] Y. Luo, P. Cai, **Y. Lee**, and D. Hsu. “GAMMA: A General Agent Motion Model for Autonomous Driving”. *IEEE Robotics and Automation Letters (RA-L)*, 2022.
- [2] **Y. Lee**, P. Cai, and D. Hsu. “MAGIC: Learning Macro-Actions for Online POMDP Planning”. In *Robotics: Science and Systems (RSS)*, 2021.
- [1] P. Cai*, **Y. Lee***, Y. Luo, and D. Hsu. “SUMMIT: A Simulator for Urban Driving in Massive Mixed Traffic”. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2020.

SERVICE

- Reviewer for RA-L and IROS.
- Co-organized the RSS 2021 Workshop on Integrating Planning and Learning.

TECHNICAL SKILLS

Languages C/C++, Python, JavaScript, Java, C#
ML/AI PyTorch, SMAC3, OpenMP, OpenCV

Robotics ROS, OMPL, MoveIt, Blender, UE4
Miscellaneous Git, CI/CD, SQL, AWS, L^AT_EX

ACHIEVEMENTS

IEEE Singapore Computer Society Prize	2021
NUS Outstanding Undergraduate Researcher Prize	2021
NUS Certificate of Distinction in Artificial Intelligence	2020
Winner (Top 8), Hack&Roll Hackathon	2019
A*STAR Chairman's Honors List	2018
A*STAR Undergraduate Scholarship	2017