LI-HENG LIN

EDUCATION

Stanford University 09/2022 - Present

M.S. in Computer Science

- Cumulative GPA: **3.96**/4.30
- Selective Courses: Deep Multi-Task and Meta Learning, Principles of Robot Autonomy II, Decision Making under Uncertainty, Deep Reinforcement Learning, Mining Massive Datasets

National Taiwan University (NTU) 09/2017 - 01/2022

B.S. in Computer Science and Information Engineering (CSIE)

- Cumulative GPA: **4.13**/4.30, Major GPA: **4.15**/ 4.30, Overall Ranking: **19/ 181 (10.5%)**
- Selective Courses: Machine Learning Foundations, Probability, Machine Learning, Matrix Algebra and Its Applications, Topics in Machine Learning

RESEARCH EXPERIENCE

ILIAD Lab, Stanford 09/2022 - Present

Graduate Research Assistant Advisor: Prof. Dorsa Sadigh

Enabling robots to leverage human gestures [1]

- Created prompt for Large Language Models (LLMs) to reason about gestures.
- Proposed an effective heuristic to ground pointing gesture with the environment.
- Implemented the whole system and achieve 70% higher success rates than baseline.

Computational Learning Lab, NTU 06/2020 - 01/2022

Undergraduate Research Assistant Advisor: Prof. Hsuan-Tien Lin, Dr. Chun-Liang Li

Practical Guide for Deep Active Learning (DAL)

- Discovered an inconsistency in the settings used in different DAL works.
- Investigated the effect of several design choices (model initialization, loss function, hyper-parameters tuning, warm-starting/ cold-starting) in DAL.

Cyber-Physical Systems Lab, NTU 09/2019 - 01/2022

Undergraduate Research Assistant Advisor: Prof. Chung-Wei Lin, Prof. Iris Hui-Ru Jiang

Improving Robustness of Graph-based Intelligent Intersection Management System [3]

- Proposed a protection mechanism to guarantee no deadlock by limiting the number of vehicles.
- Devised an efficient deadlock construction algorithm for computing the size of the minimal deadlock and extended it to output a pessimistic estimation while saving computation time.
- System reduced vehicle wait time by 52% on average compared to traditional traffic light systems while being deadlock-free.

WORK EXPERIENCE

Google Inc. 06/2021 - 09/2021

Software Engineering Intern, Android Accessibility Team Host: Richard Chang

Braille Image Translator

- Developed an algorithm to translate the image of a braille device into its corresponding text by using image processing techniques (pre-processing, contours finding) and the open-source package Liblouis.
- Completed an Android application as an interface for the user to directly translate the image captured by mobile phones.
- Empowered people who do not know anything about braille to understand the context of a braille sequence in about 5-10 seconds.

PUBLICATIONS

[1] **Li-Heng Lin**, Yuchen Cui, Yilun Hao, Fei Xia, Dorsa Sadigh, ”Gesture-Informed Robot Assistance via Foundation Models”, Conference on Robot Learning (CoRL) 2023

[2] Shao-Ching Huang, Kai-En Lin, Cheng-Yen Kuo, **Li-Heng Lin**, Muhammed O. Sayin, Chung-Wei Lin, ”Reinforcement-Learning-Based Job-Shop Scheduling for Intelligent Intersection Management”, ACM/IEEE Design, Automation and Test in Europe Conference (DATE) Special Initiative on Autonomous Systems Design (ASD) 2023

[3] **Li-Heng Lin**, Kuan-Chun Wang, Ying-Hua Lee, Kai-En Lin, Chung-Wei Lin, Iris Hui-Ru Jiang, ”Deadlock Resolution for Intelligent Intersection Management with Changeable Trajectories”, IEEE Intelligent Vechiles Symposium (IV) 2022