Haoyang CHEN

haoyang-chen.github.io

Education

Southeast University, Nanjing, China — 09/2020 – 09/2024
- *Bachelor of Computer Science* — **GPA: 3.85/4.0** — **Avg. Score: 88.44**

Hong Kong Polytechnic University,Hong Kong, China — 07/2021 – 08/2021
- *International Summer School* — **GPA: 4.0/4.0**

Publications

i-Rebalance: Personalized Vehicle Repositioning for Supply Demand Balance
H Chen, P Sun, Q Song, W Wang, W Wu, W Zhang, G Gao, Y Lyu — AAAI 2024

Multi-agent reinforcement learning for fleet management: a survey
H Chen, Z Li, X Yao — AIAHPC 2022

Research Experience

Ubicomp Lab, National University of Singapore, Singapore — 08/2023 – Present
Research Assistant, advised by Brian Lim & Wencan Zhang

COOLA Lab, Southeast University, China — 08/2021 – 08/2023
Research Assistant, advised by Yan Lyu & Wanyuan Wang

Research Projects

Modularized Interpretable MDSS with Visual Programming — 08/2023 – Present
- Worked independently in designing a Visual Programming Toolkit as a RapidMiner extension for physicians to build and train ECG diagnostic model by drag and drop.
- Combined first order logic with deep neural networks, allowing the system to transform drawn flowcharts into trainable deep learning models.
- Worked on visualization of ECG signals and diagnostic results to facilitate interpretability and human-machine trust.
- Extension published on RapidMiner Marketplace.

Personalized Vehicle Repositioning for Ride-hailing Platforms — 12/2021 – 08/2023
- Led a team of 3 in designing a reposition algorithm that considers driver preference.
- Proposed a personalized sequential vehicle reposition framework with dual DRL agents and conducted on-field user study of 106 professional drivers.
- Customized a vehicle reposition simulator with driver behavior modeling.
- Published a survey paper of using Multi-Agent Reinforcement Learning in Fleet Management on AIAHPC 2022.
- Research paper submitted to AAAI 2024, under second phase review.

Ear Motion Tracking System for VR Devices — 04/2022 – 05/2023
- Led a team of 3 on detecting ear motion as input to VR devices.
- Utilized ear motion as a replacement for traditional handles as an input measure to be used in VR to facilitate the people with special needs.
- Built a prototype using headset and endoscopes. Detected ear motion with Lucas-Kanade optical flow method.
- Carried out a small group of user study on 15 volunteers.

Honors and Awards

Awarded **Meritorious Winner** of Interdisciplinary Contest in Modeling. — 05/2022
Awarded **Tencent Scholarship** for being in top 10% students. — 11/2021

Extra Curricular Activities

Osaka University Anniversary Lecture Series in Quantum Information Science — 07/2021
Leadership program **Global Case Challenge, Washington State University** — 05/2021