Haoyang CHEN

Research Interest

I am interested in **Human-Centered Computing** and **Social Computing**, especially in Human Behavior and User preference modeling and analysis.

Contact Information

❑ School of Computer Science and Engineering, **Southeast University**

❑ School of Computing, **National University of Singapore**

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Education

Southeast University, Nanjing, China 09/2020 – 09/2024

- *Bachelor of Computer Science* **GPA: 3.85/4.0** **Avg. Score: 88.44**
- Department of Computer Science and Engineering
- *Major Courses* († Ranked as **top 1**)

Program Design 98†	Mathematical Analysis 91	Algorithm Design and Analysis 94†
Data Structures 97	Advanced Algebra 94	Probability Theory and Statistics 94

Hong Kong Polytechnic University,Hong Kong, China 07/2021 – 08/2021

- *International Summer School* **GPA: 4.0/4.0**

Publication

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

Under Review

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)

Research Experience

Ubicomp Lab, National University of Singapore, Singapore 08/2023 – Present
Research Assistant Principal Investigator: **Prof. Brian LIM**
Working on User-centric Explainable AI. Dedicated to empowering physicians with visual programming for building Diagnostic Systems using modular neural networks to improve interpretability.

COOLA Lab, Southeast University, China 08/2021 – 08/2023
Research Assistant Principal Investigator: **Prof. Yan LYU**
Worked on preference aware intelligent transportation systems. Dedicated to user behavior modeling and building user preference-aware systems as well as applied reinforcement learning.

Research Projects

Modularized Interpretable MDSS with Visual Programming 08/2023 – Present

- Designing a Visual Programming Toolkit for building AI diagnosis models as a reference to lighten the doctors' workload.
- Empowering doctors with Modularized Neural Network Nodes to build highly customized diagnosis models align with their own preference.
- Enhancing the interpretability of AI diagnosis models to improve human-machine trust by offering interpretations and visualizations on each module.

Personalized Vehicle Repositioning for Ride-hailing Platforms 12/2021 – 08/2023

- Led a team of 3 to design 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 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 IJCAI 2023, scoring 6/6/5/5. Under Review for AAAI 2024.

Ear Motion Tracking System for VR Devices 04/2022 – 05/2023

- Instructed 2 sophomores 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.

Side Projects

C-*H*-ina: Online Hotel Searching Service 02/2023 – 05/2023

- ❑ Built a hotel lookup website with crawled detailed description and room data of 10,000+ hotels all over China from Booking.com.
- ❑ Implemented the connection between the backend and the database as well as the modification and searching within the database.
- ❑ Learnt to code in Java, JavaScript and SSM framework(Spring, Spring MVC, Mybatis).

Industrial Big Data Inspection System 07/2022 – 09/2022

- ❑ Worked in a group of 5 to build an online industrial inspection system with dashboard.
- ❑ Implemented an anomaly detection module using LOF-ICAD cooperating with InfluxDB.
- ❑ Won Best Project Award for outstanding team project.

Semantic Segmentation on CityScapes Dataset 07/2021 – 08/2021

- ❑ Worked in a group of 5 to use U-net for semantic segmentation on cityscapes dataset for autonomous driving.
- ❑ Learnt to prepare the dataset and wrote an assessment report on the model performance.
- ❑ Won certification of Completion of ML in Autonomous Driving, MIT and earned an A grade.

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

- Completed **Osaka University Anniversary Lecture Series** in Quantum Information Science 05/2021 – 07/2021
- Completed leadership program **Global Case Challenge, Washington State University** 04/2021 – 05/2021

Skills

LaTeX, Python, C/C++, JavaScript, Matlab, JMP, SQL, RapidMiner, Git, Swift