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 Uuser-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 in designing a reposition algorithm that considers driver preference.
- Proposed a <u>personalized</u> sequential vehicle reposition framework with dual <u>DRL</u> agents and conducted <u>on-field user study</u> of 106 professional drivers.
- Customized a vehicle reposition simulator with driver behavior modeling.
- Published a survey paper of using <u>Multi-Agent Reinforcement Learning</u> 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 <u>user study</u> 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, Java, Matlab, JMP, SQL, RapidMiner, Git, Swift