Haocheng Yuan

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Education

- **University of California San Diego** *Sept 2024 - June 2026*
  MSc in Computer Science and Engineering CGPA: none
- **University of Nottingham Ningbo China (with one year study abroad)** *Sept 2020 - June 2024*
  BSc in Computer Science CGPA: 3.94/4

Experience

- **IceWould High Tech** *May 2021 – Dec 2021*
  Software Development Intern Ningbo, China
  – Involved in the development of a WeChat mini-app in VUE that allows users to generate preview images of makeup effects using AR technology.
  – Collaborated with teammates to develop the front end of this app and wrote requirements documents.
- **Digital Port Lab, University of Nottingham** *June 2023 – Aug 2024*
  Research Assistant Ningbo, China
  – Participated in the National Science Foundation project, using evolutionary algorithms and deep reinforcement learning technology to improve the dispatching efficiency of large container ports (Ningbo Zhoushan Port).
  – Utilized LSTM to process time series data and extract key features related to port scheduling. Optimized scheduling strategies using A2C and PPO algorithms, incorporating spatiotemporal visual features and innovative reward shaping to speed up training.
  – Improved the dispatch efficiency of trucks, ships, cranes, and AGVs, summarized the research in a paper.

Projects

- **Artcode App** *Sept 2022 - May 2023*
  A mixed-reality museum electronic guide system for the British Djanogly Art Gallery.
  – Tools used: Java, HTML, SQL, Cordova, OpenCV, Jest
  – Functioned as a team leader in developing full-stack software designed to attract tourists to revisit the gallery at the request of the gallery director.
  – Led a five-member team to build a full-platform app from scratch: communicate with the museum stakeholders, manage timeline in an Agile style, and set up CICD automatic testing procedure for team collaboration.
  – Integrated Artcodes, an image recognition technology, to the app to scan formatted images and activate the associated action, to create an optimal human interaction experience to customize visitor experiences.
- **Factory Human Body Tracking Vision System** *June 2022 – Sept 2022*
  A visual-based control system for identifying dangerous human behavior in the factory.
  – Technologies used: Deep Learning, Machine Learning, Computer Vision
  – Collaborated with Vichnet company and developed a vision-based model that identifies anyone present in illegal areas of the factory to avoid injury.
  – Combined the Resnet model with the Siamese CNN to improve the efficiency of human identification on the Market1501. Conducted transfer learning to fine-tune the pre-trained offline model based on the factory's data and successfully improved the accuracy of intelligent security protection systems.
- **AGV swarm scheduling in hospitals** *June 2023 – Dec 2023*
  An AGV swarm scheduling system using digital twin technology to enhance operation efficiency.
  – Technologies used: Java, Anylogic Simulation, Reinforcement Learning, Distributed Computing
  – Led a start-up project for a local hospital, collaborating with local software engineers to develop a simulation platform to replicate daily logistics services and AGV scheduling in the hospital.
  – Implemented a simulation hyper-heuristic combination optimization algorithm to improve AGV scheduling efficiency and proposed a novel surrogate model to expedite the search process.

Technical Skills and Interests

Languages: English - Fluent and Mandarin - Native
Developer Tools: Proficient in Java, Python. Familiar with C, C++, Haskell, SQL.
Soft Skills: Communication, Collaboration, Resilience, Leadership

Publications

A Simulation Hyper-Heuristic Method for Multi-Floor AGV Delivery Services in Hospitals. 2023 IEEE Symposium Series on Computational Intelligence (SSCI), Mexico City, Mexico, 2023, pp. 1221-1226.
H. Yuan, X. Chen, J. Zhu, and R. Bai