HAOKUN (HARRY) ZHAO

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EDUCATION

University of California, San Diego, San Diego, CA
Master of Science in Electrical and Computer Engineering **Expected Jul. 2026**

The Chinese University of Hong Kong, Shenzhen, Shenzhen, China
Bachelor of Engineer in Computer Science and Engineering, GPA: 3.5/4.0 **Jul. 2024**

University of California, Berkeley, Berkeley, CA
Visiting Student in College of Engineering, GLOBE Program, GPA: 3.8/4.0 **Aug. 2022 - Dec. 2022**

RESEARCH AND PROJECT EXPERIENCES

CUHK(SZ) School of Data Science, Shenzhen Research Institute of Big Data **Apr. 2023 – Present**
Research Assistant, Supervisor: Prof. Jicong Fan *Shenzhen, China*

- Wrote article "Collaborative Disease Detection" for Nature Computational Science as the first author.
- Designed a data pre-processing pipeline to analyze the non-ICU data from MIMIC-IV electronic medical database.
- Combined Graph Neural Networks (GNNs) with patient-disease interactions and patient-side information to diagnose potential diseases, achieving an overall 5% improvement in performance against several baselines.

Online Linear Programming and Resource Allocation **Jan. - May 2023**

- Implemented offline and online SLPM and SCPM algorithms as well as AHDL (Action-history-dependent Learning) algorithm to solve the resource allocation problem.
- Put forward our own Window Shift Learning Algorithm to deal with bid prices data under non i.i.d. assumptions, achieving the best competitive ratio of 96% over all other algorithms.

Machine Learning Neural Networks Construction **Aug. 2022 - Dec. 2022**

- Implemented a neural network including a forward pass, a backward pass, a loss function, activation functions, and weight updates in NumPy, achieving a test accuracy of 0.98 on the MNIST dataset.

Reinforcement Learning: Pacman **Aug. 2022 - Dec. 2022**

- Applied Reinforcement Learning (RL) algorithms to complete the Pacman task, earning full marks for the project. Proficiently demonstrated expertise in fundamental RL algorithms such as Q-learning and value learning.

Missing Data Imputation and Causal Discovery in Physical Examination Data **Jan. 2022 - May 2022**

- Developed a causal discovery algorithm by employing Directed Acyclic Graphs to discover the causal relationships between arteriosclerosis and eighty test indices based on the physical examination data from a local hospital.

PROFESSIONAL EXPERIENCE

Shenzhen RINO Cloud Technology Co., Ltd. **Jul. 2020 - Sept. 2022**
IPC Engineering Assistant *Shenzhen, China*

- Optimized the open-source YOLOv8 model for low-latency object detection; Enabled real-time human detection and dangerous behavior recognition on live video streams via server deployment using Docker and edge device integration.
- Participated in the Private Board of Directors on Global IPC Solutions hosted by RINO in partnership with Agora Lab, Inc. and Oracle. Collaborated closely with industry experts in IP cameras (IPC) and fostered a comprehensive understanding of IPC and Internet of Things (IoT) trends from a global perspective.

TEACHING EXPERIENCE & LEADERSHIP

Undergraduate Student Teaching Fellow (USTF) for DDA3020 Machine Learning **Sept. 2023 – May 2024**

- Credits: 3; Student number: 250 (Fall 2023) + 300 (Spring 2024)
- Conducted tutorials on mathematics derivation of the Backpropagation algorithm in neural networks and Gaussian Mixture Models for over a hundred students.
- Hosted weekly office hour to provide support and address students' inquiries.

TECHNICAL STRENGTHS & INTERESTS

Coding Skills Python (proficient), C++, Java, MATLAB, SQL, Verilog
Hobbies Saxophone (level ten), Go (2nd Dan), Fencing (8th place in Shaanxi Province), Badminton, Table Tennis