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**

SKILLS & INTERESTS

Programming Languages: Python, C, C++, Java, MATLAB, SQL, PowerShell, CUDA
Frameworks: PyTorch, TensorFlow, Keras, OpenCV, Sklearn, NumPy, Pandas
Others: Machine Learning, Recommendation Systems, Graph Neural Networks, Deep Learning, Data Processing
Interests: Saxophone (level 10), Go (2nd Dan), Fencing (8th place in Shaanxi Province), Badminton, Table Tennis

PROFESSIONAL EXPERIENCE

IPC Engineer Intern, *Shenzhen RINO Cloud Technology Co., Ltd.*, Shenzhen, China **Jul. 2022 - Sep. 2022**

- Optimized the YOLOv8 model for real-time human detection and dangerous behavior recognition on live video streams, achieving low latency via Docker and edge device deployment.
- Labelled images collected from IP cameras on CVAT platform and built a custom human detection dataset.
- Participated in the Private Board of Directors on Global IPC Solutions, gaining a comprehensive understanding of IPC and Internet of Things from a global perspective.

RESEARCH & PROJECTS

CUHK(SZ) School of Data Science, Shenzhen Research Institute of Big Data, Shenzhen, China **Apr. – Sep. 2024**

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

NP-Hard Graph Partition Problem Solver, *UC Berkeley*, Berkeley, CA **Aug. - Dec. 2022**

- Employed the Louvain community detection algorithm with gradient descent optimization to design a solver for large-scale NP-hard graph partition problems, achieving performance within the top 15% of the class.

Machine Learning Neural Networks Construction, *UC Berkeley*, Berkeley, CA **Aug. - Dec. 2022**

- Utilized the Python NumPy library to implemente both forward and backward propagation algorithms for a neural network for MNIST handwritten dataset recognition.

Missing Data Imputation and Causal Discovery in Physical Examination Data, Shenzhen, China **Jan. – 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.

LEADERSHIP

Undergraduate Student Teaching Fellow for DDA3020 Machine Learning, Shenzhen, China **Sep. 2023 – May 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.