

Peiran Li

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EDUCATION

The Chinese University of Hong Kong

Bachelor of Science in Computer Science

Major GPA: 3.765/4.0

Expected Graduation: July 2025

- **Relevant Coursework:** Data Structures, Design and Analysis of Algorithms, Database System, Artificial Intelligence, Software Engineering, Statistic, Operating systems, Neuroengineering

PROFESSIONAL EXPERIENCE

Gaze-Based Supervision for Medical Image Segmentation

The Chinese University of Hong Kong, *Research Assistant*(under Prof. Qi Dou)

September 2024 - Present

- Developed a scheme for collecting dense weak supervision for medical image segmentation, utilizing a gaze annotation scheme paired with a contrastive learning approach.
- Employed eye-tracking devices to gather gaze data, subsequently processing this data to enhance model training.
- Conducted comparative studies against traditional manual annotation methods, demonstrating a significant reduction in the costs associated with medical image segmentation.

Out-Of-Distribution Detection in Neural Networks

The Chinese University of Hong Kong, *Research Assistant*(under Prof. Tsung-Yi Ho)

June 2024 – August 2024

- Proposed a post-hoc activation shaping method based on the characteristics of neural networks and designed the corresponding algorithm to enhance OOD detection capabilities.
- Validated the effectiveness of the method across multiple datasets (CIFAR-100, SVHN, ImageNet), enhancing the neural networks' capability to distinguish OOD data while maintaining classification accuracy.
- Presented the OOD project at a faculty-wide poster presentation in August 2024, showcasing innovative findings and methodologies to academic peers.

Content-Oriented Website Development

The Chinese University of Hong Kong, *Website Developer*

Feb 2024 – May 2024

- Leveraged React for advanced front-end development and JavaScript for robust back-end services, achieving a seamless responsive design and engaging user interactions.
- Engineered and administered a MongoDB-based user database, significantly improving data efficiency and performance in storage and retrieval operations.
- Developed and launched a sophisticated web platform that enables dynamic social interactions like posting, commenting, and user engagement.

AI Methods for RNA-Disease Prediction in Healthcare

The Chinese University of Hong Kong, *Research Assistant*(under Prof. Yu Li)

June 2023 – August 2023

- Collected and processed data from the LncRNADisease v3.0 database, preparing it for analysis in the lncRNA-disease interaction project.
- Developed and implemented an effective RNA-FM classification model to predict lncRNA-disease interactions, enhancing the understanding of ncRNA roles in disease mechanisms.
- Implemented machine learning algorithms to refine RNA-disease association predictions, resulting in models that are both more accurate and efficient in processing large datasets.

LEADERSHIP EXPERIENCE

Three Heart Club of CUHK, Vice President, Hong Kong

September 2021 – February 2023

- Orchestrated multiple voluntary education projects, showcasing strong leadership and a deep commitment to community service.
- Liaised with the Office of Student Affairs (OSA) at CUHK, Tin Ka Ping Education Foundation, Pui Wah Foundation, and other crucial organizations to secure vital funding for diverse programs.

HONORS AND AWARDS

Dean's List

2023 -2024

Summer Research Grant, HKD 10,000, The Chinese University of Hong Kong

2024

SKILLS

Programing Languages: Python, Java, C++, C, SQL, JavaScript, React, SQL

Knowledge Areas: Web Development, Database Management, Medical Image Processing, Trustworthy AI