Jihao Li

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Education

The Chinese University of Hong Kong — Master of Science in Computer Science — Sep 2024 – Nov 2025

• GPA: 3.3/4.0 | Academic Excellence Scholarship | IELTS: 6.5

• Relevant Courses: Efficient Computation for Deep Neural Networks, Cryptography Information Security and Privacy, Distributed Server Architectures

Beijing University of Posts and Telecommunications — Bachelor of Engineering in Software Engineering — Sep 2018 – Jul 2022

• GPA: 3.63/4.0 | National Endeavor Scholarship

• Relevant Courses: Data Structures and Algorithms, Computer Networks, Operating Systems, Computer Organization, Database Principles

Publications

WaveU3S: A Lightweight Wavelet Dual-Attention Unet for 3D Medical Image Segmentation

T. Zhong, H. Yang, J. Li , M. Lyu, S. Liu | **IEEE ISBI 2024**

• Proposed the **first lightweight model integrating wavelet transform and dual-attention mechanisms for 3D medical segmentation**. Utilized **3D-DWT for lossless feature compression**, significantly reducing computational complexity from $O((HWD)^2C)$.

• Achieved **state-of-the-art performance** with an average Dice coefficient of **84.94%** on the FLARE22 dataset (13 organs) and ranked **first** on the ACDC cardiac dataset with **92.89%** average Dice.

• The model contains only **24.7M** parameters and **233.2 GFLOPs**, achieving a **44% reduction in parameters** compared to models with similar performance, significantly outperforming benchmarks like UNETR and nnFormer in efficiency.

SAStainDiff: Self-supervised Stain Normalization by Stain Augmentation using Denoising Diffusion Probabilistic Models

H. Yang, M. Lyu, S. Yan, T. Zhong, J. Li, T. Xu, H. Xie, S. Liu | **Biomedical Signal Processing and Control 2025** (JCR Q1, CAS Q2)

• Proposed the **first self-supervised stain normalization method based on Denoising Diffusion Probabilistic Models (DDPM)**, addressing mode collapse and grid artifacts in GANs, enabling training **without paired data**.

• Achieved **state-of-the-art quantitative results** on the MITOS-ATYPIA'14 dataset: PSNR **22.591**, MS-SSIM **0.951**, surpassing all traditional and GAN-based methods.

• Downstream task validation: Improved accuracy to **89.7%** for lymphoma classification on **Camelyon16** and achieved a Dice coefficient of **87.9%** for colon gland segmentation on **GlaS**, demonstrating exceptional generalization capability.

Research & Projects

Research on Whole Slide Image-based Survival Prediction — ljhOfGithub/SurvivalPredictionResearch

• Conducted a systematic review of **150+ publications**, analyzing the application of **64 state-of-the-art methods** in WSI survival prediction.
• Summarized and proposed a unified **three-stage framework**: Feature Extraction, Feature Aggregation, and Survival Analysis.
• Categorized methods from multiple dimensions: sampling strategies, feature encoders (self-supervised learning, transfer learning), aggregation methods (attention mechanisms, Transformers, Graph Neural Networks), and multi-modal fusion.
• Designed and conducted fair comparative experiments on **5 TCGA datasets**, evaluating **10 SOTA methods** using C-index and Kaplan-Meier analysis.
• Explored key challenges in computational pathology (e.g., annotation scarcity, interpretability) and future research directions.

Cryptocurrency Transaction Fraud Detection Tool `ljhOfGithub/BachelorGraduationDesign`

• Built a scalable Ethereum fraud detection system based on **Machine Learning** and **Graph Neural Networks**.
• Collected and labeled **6,434 fraudulent addresses** and **18,401 normal addresses** from Etherscan, Bloxy, and CryptoScamDB.
• Designed **13 types of graph structure and transaction features**; baseline model achieved **85% recall**.
• Implemented and evaluated **GNN models**; TAGCN achieved **93.18% accuracy and 88.96% recall**.
• Applied **association conviction heuristics**, uncovering **33,664 suspicious nodes** and revealing fraud clusters.
• Analyzed **603 fraudulent promotion posts** on Twitter and Telegram to study fraud propagation patterns.

Work & Internship Experience

Full Stack Software Engineer Future-T Technology HK Co. Ltd. Sep 2024 – Nov 2025

• Designed and developed a campus-wide electronic form system for The University of Hong Kong, serving over **30,000 students and staff**.
• Built a driving school CRM, a tutoring class management system, and a rubber factory production process visualization system, serving **5,000+ clients**.
• Frontend developed using React stack, cumulatively wrote **40,000+ lines of frontend code** and **20,000+ lines of backend code**.

Java Backend Development Intern Beijing Ruizhi Technology Co., Ltd. Apr 2024 – Jun 2024

• Built a model monitoring system based on Spring Boot framework, participated in developing the RuiDing Model Management Platform software.
• Improved interface response speed by **30%** through data metric analysis and optimization.

Research Assistant Shenzhen Technology University Sep 2023 – Apr 2024

• Responsible for research in computational pathology and histopathology image-based survival prediction modeling.

Technical Skills

Backend Development: Java Spring Boot, PHP Laravel, Golang

Frontend Development: React, Vue, TypeScript

Artificial Intelligence: PyTorch, Graph Neural Networks, Transformer

Blockchain: Solidity, web3.js, Ethereum

DevOps: Linux/Unix, MySQL, Git, Docker, Bash

Testing Tools: Selenium, Playwright, UI Automator