Haoyu Wang

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https://carlwhy-28.github.io

Education

University of Pittsburgh (Master's Degree) Pittsburgh, US 2024 - 2025(expected)

- Major: Information Science

Beijing Forestry University (Bachelor's Degree) Beijing, CN 2020 - 2024

- Major: Computer Science and Technology

Internship Experience

UPMC Hillman Cancer Center (Position: Computational Biology Intern) Pittsburgh, US August 2024 – current

- Developed and applied machine learning models for multimodal spatial transcriptomics analysis, integrating gene expression, spatial, and protein data at Osmanbeyoglu Lab
- Conducted quantitative analysis and visualization of transcriptional and pathway activities in cancer research, identifying key patterns across patient samples

Beijing Huashu Yihui Technology Co., Ltd (Position: Data Analyst) Beijing, CN March 2024 – JUN 2024

- Utilized Python and SQL for the analysis, outlier detection and missing value process of medical data
- Selected features for a large medical model, used z-scores to detect anomalies, and utilized KNN to fill in missing values

Shenzhen Zmotion Technology Co., Ltd (Position: Vision Engineer) Shenzhen, CN July 2023 – March 2024

- Utilizedb Python for visual positioning, matching, and detection algorithm encapsulation in the company's IDE
- Assisted in function packaging for visual features and created document for developer

Research Experience

GCN-Based Spatial Transcriptomics Analysis September 2024 – current

- Designed and implemented a GCN framework integrating spatial and molecular data to predict protein expression from mRNA in spatial transcriptomics datasets
- Improved cross-sample prediction accuracy and spatial resolution while enabling deeper insights into multimodal relationships

Pancreatic Cancer Spatial Transcriptomics Analysis August 2024 – current

- Performed downstream analysis of pancreatic cancer ST data, utilizing statistical models to infer transcription factor and pathway activities across patient groups
- Identified significant patterns and visualized results to uncover biological insights related to cancer progression and survival

Driver Fatigue Detection Algorithm Based on Deep Learning (Graduation project) March 2024 – Jun 2024

- Realized the analysis of human fatigue states based on YOLOv8-pose and devised a multi-modal evaluation algorithm

Detection and Removal Operation Robot June 2022 - August 2022

- Developed a perceptron component, including the deep learning-based object detection and the ranging function

Certifications

Machine Learning, Modeling, and Simulation Principles - Massachusetts Institute of Technology 2021

Skills

- Programming skills: Java, C++, C, Python, Pytorch, Git, Linux, Matlab, Labview, MySQL, SQL Server
- Web Dev: Html, Css, JavaScript, Vue, Apache Web Server, Tomcat Web Server