崔泽洋 Cui Zeyang

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Education

The Hong Kong Polytechnic University 2024.9 – Present
Ph.D. Student

The University of Hong Kong 2022.9 – 2023.11
Master of Science in Computer Science

Lanzhou University (985 & 211 Project) 2018.9 – 2022.6
Bachelor of Science in Computer Science and Technology

Research Experience

Research Assistant: HK PolyU Lab IMCL 2023.11 – 2024.08

- supervisor: Professor Jiannong Cao (The Hong Kong Polytechnic University)
- Conducted research related to edge computing, distributed inference of large models, digital twins, and the metaverse, contributing to the publication of three papers.

Anomaly Node Detection Based on Graph Contrastive Learning 2023.03 – 2023.08

- supervisor: Professor Chao Huang (The University of Hong Kong)
- Developed a graph contrastive framework for anomaly node detection and mini-batch strategies based on subgraph sampling for training on million-node datasets in financial social networks.

Drug Repositioning Prediction Based on Matrix Completion 2020.12 – 2021.05

- supervisor: Professor Yongna Yuan (Lanzhou University)
- Acted as a peer mentor to guide an undergraduate thesis: data analysis, machine/deep learning, graph neural networks.

COVID-19 Epidemic Spread Control Analysis Based on Influence Maximization and Improved SEIR Model

- supervisor: Professor Ruisheng Zhang (Lanzhou University) 2020.02 – 2020.05
- Participated in writing grant manuals and research reports and contributed to data analysis and code optimization.

Research on Compounds Related to Alzheimer's Disease: Dual-Driven Drug-Target Prediction via heterogeneous Networks and Multi-task Learning 2019.10 – 2020.02

- supervisor: Professor Yongna Yuan (Lanzhou University)
- Developed a deep learning algorithm for drug-target prediction. Conducted data cleaning, preprocessing, and feature engineering on large protein and drug datasets and created the dataset.

Publications (Undergraduate)

JOURNAL OF CHEMICAL INFORMATION AND MODELING, ISSN 1549-9596 (IF: 6.162, JCR Q1), Co-first author
Quantum Chemical Calculations with Machine Learning for Multipolar Electrostatics Prediction in RNA: An Application to Pentose
DOI: 10.1021/acs.jcim.2c0074

JOURNAL OF HAZARDOUS MATERIALS, ISSN 0304-3894 (IF: 14.224, JCR Q1)
Effects of Polyethylene Microplastics on Cell Membranes: A Combined Study of Experiments and Molecular Dynamics Simulations
DOI: 10.1016/j.jhazmat.2022.128323

CHEMOSPHERE, ISSN 0045-6535 (IF: 8.943, JCR Q1)
Identification of Molecular Initiating Events and Key Events Leading to Endocrine Disrupting Effects of PFOA: Integrated Molecular Dynamic, Transcriptomic, and Proteomic Analyses
DOI: 10.1016/j.chemosphere.2022.135881

ENVIRONMENTAL POLLUTION, ISSN 0269-7491 (IF: 9.988, JCR Q1)
Machine Learning Models Based on Residue Interaction Network for ABCG2 Transportable Compounds Recognition
DOI: 10.1016/j.envpol.2023.122620

ICPADS 2023 (CCF C)
Title: Towards a Lightweight Stress Prediction Model: A Study on Dimension Reduction and Individual Models in HRV Analysis

Polystyrene and Polyethylene Perturb the Structure of Membrane: An Experimental and Computational Study (Under Review)

Publications (PolyU Research Assistant Period)

MetaCom 2024
PolyTwin: Edge Blockchain-enabled Trustworthy Digital Twin for Metaverse
Yinfeng Cao, Jiannong Cao, Zeyang Cui, Dongbin Bai, Mingjin Zhang, Long Wen

iMETA 2024
Eden: An Edge Computing Empowered Proof-of-Personhood Protocol for Anti-Sybilin Metaverse
Yinfeng Cao, Jiannong Cao, Hongbo Liu, Zeyang Cui*

Under Review
EdgeShard: Efficient LLM Inference via Collaborative Edge Computing
Mingjin Zhang, Jiannong Cao, Xiaomin Shen, Zeyang Cui

Internships

School of Pharmacy, Lanzhou University (Undergraduate) 2020.07 – 2021.10

- supervisor: Professor Chunyan Zhao - Lanzhou University
- Participated in the work of the National Natural Science Foundation of China (General program, Grant No.: 21976073): *Research on the Complex Biological Network of the Role of Typical Organic Pollutants and Key Proteins in the Atmosphere*
- Conducted big data analysis and optimized graph algorithms on a million-node biological protein dataset, integrating biological experiments and molecular dynamics simulations to construct a compound-target network model.
- Contributed to publishing four papers (All JCR Q1 journals).

Blockchain Technology Research Center, Shenzhen University (Undergraduate) 2019.07 – 2019.08

- supervisor: Professor Shengli Zhang - Shenzhen University
- Participated in the national key research and development program: *Research and Demonstration of Key Technologies of Urban Multi-plan Data Fusion and Dynamic Cognition*
- Wrote programs for data collection and conducted big data analysis.

Others

- Co-founder of the ”StarDust” VTuber Project : The society hosts over 100 Virtual YouTubers(VTuber), actively present on platforms like Bilibili and TikTok/Douyin. The active accounts under its banner have a total following of over 1 million (with a cumulative reach of over 2 million). The top VTuber has over 100,000 followers on the Bilibili platform. Currently, a collaboration has been established with ByteDance’s Picopico in the field of 3D virtual broadcasting, focusing on VR and the Metaverse.
- GitHub: https://github.com/Soullesskid/
- ResearchGate: https://www.researchgate.net/profile/Zeyang-Cui