

CUI ZEYANG

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EDUCATION

The University of Hong Kong

- MSc in Computer Science 09/2022-12/2023
Major courses completed: *Big Data Management; Data Mining; Deep Learning; Machine Learning*
GPA: 3.35 / 4.3

Lanzhou University (National Project of 985 & 211), China

- BEng in Computer Science and Technology (Data Sciences) 09/2018-06/2022
GPA: 3.54

RESEARCH EXPERIENCE

Study of Collaborative Edge Based Large Language Model Inference 11/2023-05/2024

- Position: Research Assistant - The Hong Kong Polytechnic University
- Instructor: Prof. Cao Jiannong - The Hong Kong Polytechnic University
- Participated in research on a distributed inference framework to inference LLM at the edge side
- Research of Digital Twins and Metaverse Based on Collaborative Edge Platforms
- Participated in the completion of Three academic papers (see contributions in the Publications section)

Study of Anomaly Node/Link Detection Based on Graph Contrastive Learning 03/2023-08/2023

- Instructor: Prof. Chao Huang - The University of Hong Kong
- Developed a graph contrastive framework for node classification/recommendation/link prediction

Study on the Complex Biological Network of the Interaction Between Typical Organic Pollutant Components and Key Proteins in the Atmosphere 07/2020-10/2021

- Principle Investigator: Prof. Zhao Chunyan - Lanzhou University
- National Natural Science Foundation of China: (General Program Grant No.: 21976073)
- Participated in the completion of two academic papers (see contributions in the Publications section)

Prediction of Drug Repositioning Based on Matrix Completion 12/2020-05/2021

- Principle Investigator: Prof. Yuan Yongna – Lanzhaou University
- As a peer tutor supervised the graduation thesis of an undergraduate student

Study on Alzheimer's Disease-related Compounds - Target Relationships Doubly Driven by Collaborative Network and Multi-tasking Learning 10/2019-02/2020

- Principle Investigator: Prof. Yuan Yongna – Lanzhaou University
- Responsible for data analysis and algorithm implementation

- Principle Investigator: Prof. Zhang Ruisheng – Lanzhou University
- Responsible for code optimization and writing the fund book and other related work

PUBLICATIONS

During the undergraduate period:

- *JOURNAL OF CHEMICAL INFORMATION AND MODELING*, ISSN 1549-9596 (IF: 6.162), *co-first authors*#

Quantum Chemical Calculations with Machine Learning for Multipolar Electrostatics Prediction in RNA: An Application to Pentose; Yuan, Yongna, Yan, Haoqiu#, Cui, Zeyang#, Liu, Zhenyu#, Su, Wei, Zhang, Ruisheng; DOI: 10.1021/acs.jcim.2c00747*

Key contributor to data processing, algorithm implementation, article drafting, submission and revision

- *JOURNAL OF HAZARDOUS MATERIALS*, ISSN 0304-3894 (IF: 14.224)

Effects of polyethylene microplastics on cell membranes: A combined study of experiments and molecular dynamics simulations; Weilin Wang, Jinlong Zhang, Zhiqiang Qiu, Zeyang Cui, Ningqi Li, Xin Li, Yawei, Wang, Haixia Zhang, Chunyan Zhao; DOI: 10.1016/j.jhazmat.2022.128323.*

Responsible for data analysis and some ML algorithmic assistance

- *CHEMOSPHERE*, ISSN 0045-6535 (IF: 8.943)

Identification of molecular initiating events and key events leading to endocrine disrupting effects of PFOA: Integrated molecular dynamic, transcriptomic, and proteomic analyses; Ruining Guan, Feng Luan, Ningqi Li, Zhiqiang Qiu, Wencheng Liu, Zeyang Cui, Chunyan Zhao, Xin Li*; DOI: 10.1016/j.chemosphere.2022.135881*

Responsible for data handling and analysing large volumes of data

- *ENVIRONMENTAL POLLUTION*, ISSN 0269-7491 (IF: 9.988)

Machine Learning Models Based on Residue Interaction Network for ABCG2 Transportable Compounds Recognition; Wencheng Liu; Ningqi Li; Ruining Guan; Zeyang Cui; Yawei Wang, Chunyan Zhao DOI:10.1016/j.envpol.2023.122620*

During the MSc period:

➤ *ICPADS 2023, ISSN 2690-5965 (CCF: C)*

Towards a Lightweight Stress Prediction Model: A Study on Dimension Reduction and Individual Models in HRV Analysis; Zeyang Cui; Yanbo Ma; Muxin Ma; Runhe Huang; Bowen Du; DOI: 10.1109/ICPADS60453.2023.00238

➤ **UNDER REVIEW**

During the undergraduate period:

*Polystyrene and polyethylene perturb the structure of membrane: An experimental and computational Study; Weilin Wang; Ningqi Li; Jinlong Zhang; Ruitong Cai; Zeyang Cui; Haixia Zhang, Chunyan Zhao**

During the PolyU RA period:

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

*Eden: An Edge Computing Empowered Proof-of-Personhood Protocol for Anti-Sybil in Metaverse; Yinfeng Cao; Jiannong Cao; Hongbo Liu; Zeyang Cui**

EdgeShard: Efficient LLM Inference via collaborative Edge Computing Mingjin Zhang, Jiannong Cao, Xiaomin Shen, Zeyang Cui*

INTERNSHIP EXPERIENCE

Academic Research in School of Pharmacy, Lanzhou University

07/2020-10/2021

- 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*
- Responsible for data preprocessing and model algorithm optimization in the article *Effects of Polyethylene Microplastics on Cell Membranes: A Combined Study of Experiments and Molecular Dynamics Simulations*
- Responsible for MD data processing in the article *Identification of Molecular Initiating Events and Key Events Leading to Endorse Disrupting Effects of PFOA: Integrated Molecular Dynamic, Transcriptomic, and Proteomic Analyses*

- Participated in the national key research and development program *Research and Demonstration of Key Technologies of Urban Multi-plan Data Fusion and Dynamic Cognition*
- Assisted the R&D team in collecting data and translating English and Chinese materials

PROFESSIONAL SKILLS

- Good at Python, R, Matlab, Pytorch, and Machine/Deep learning
- Skilled at data analysis, graph neural network, and computational chemistry/ bioinformatics
- Languages: English (IELTS: 6.5); Manderine (native); Cantonese (basic, will keep learning this summer)