

YUANJIE ZOU

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Education

Imperial College London

Oct 2023 - Oct 2024

MRes in Bioengineering (Distinction)

London, UK

- Supervisor: Dr. Pedro Ballester
- Thesis: Self-Supervised Disentangled Omics Representation learning for Robust Drug Response Prediction

Xi'an Jiaotong-Liverpool University

Sep 2019 - Jul 2023

BSc in Applied Mathematics (First Class Honours)

Suzhou, China

- Supervisor: Dr. Fangting Zheng

Research Experience

Research Assistant: Metagenomic binning with DNA language model

Oct 2024 – Present

Department of Computer Science, Hong Kong Baptist University

Hong Kong SAR

Supervisor: Dr. ZHANG, Eric Lu

- Reviewed foundation model application in DNA and protein
- Improved the completeness of metagenomics binning method by language model (on-going)

MRes Thesis: Omics-informed Precision Oncology

Dec 2023 – Oct 2024

Department of Bioengineering, Imperial College London

London UK

Supervisor: Dr. Pedro Ballester

- Developed a methodology using disentanglement learning to pretrain high-quality omics embeddings.
- Designed experiments and analyzed model configuration for improved results.
- Collaborated with interdisciplinary researchers to finalize the manuscript.

Research Assistant: Weakly Supervised Learning

Jul 2022 – Aug 2023

Department of Computing, Xi'an Jiaotong-Liverpool University

Suzhou, China

Supervisor: Dr. Haiyang Zhang

- Conducted research on Positive-Unlabelled Learning, especially for tackling selection bias problem.
- Proposed a novel Positive-Unlabelled Learning framework using energy-based model.
- Developed code, contributed to manuscript, and published a paper.

Final Year Project: Topological Molecule Representation for Drug Discovery

Oct 2022 – Jun 2023

Department of Pure Mathematics, Xi'an Jiaotong-Liverpool University

Suzhou, China

Supervisor: Dr. Fangting Zheng

- Derived a differential geometry and algebraic topology-based representation for molecules.
- Enhanced molecular docking and affinity prediction using a deep learning network with attention mechanisms.
- Explored pose prediction for drug design using a diffusion model.

Summer Undergraduate Research Fellow

Jun 2022 – Sep 2022

Department of Pure Mathematics, Xi'an Jiaotong-Liverpool University

Suzhou, China

Supervisor: Dr. Fangting Zheng

- Investigated GNNs architecture model for analyzing citation network between Computer Science arXiv papers.
- Evaluated methods to mitigate the overfitting of GNNs in large-scale datasets.

Publications

- **Yuanjie Zou**, Hanqin Du, Zerui Li, Chayanit Piyawajanusorn, Qianrong Guo and Ballester Pedro*. *Self-Supervised Disentangled Omics Representation learning for Robust Drug Response Prediction*. (In preparation)
- Haiyang Zhang*, Qiuyi Chen[†], **Yanjie Zou**[†], Jia Wang, Yushan Pan, and Mark Stevenson. *Document Set Expansion with Positive-Unlabeled Learning Using Intractable Density Estimation*. (LREC-COLING 2024)

Industry Experience

NLP Engineer Intern

Jul 2021 – Jun 2022

Patsnap Pte. Ltd.

part-time

- Reproduced and evaluated various baseline of information extraction task on economic and patent dataset.
- Pre-processed large-scale dataset including data cleaning, BEP tokenizer and re-label based on frequency information