

TAO DENG

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EDUCATION

The Chinese University of Hong Kong, Shenzhen (CUHK-SZ) Sep. 2022 – Expected Jun. 2027
Ph.D. student in Data Science Shenzhen, Guangdong

Zhongnan University of Economics and Law (ZUEL) Sep. 2018 – Jun. 2022
B.Sc. in Data Science and Big Data Technology Wuhan, Hubei

PUBLICATIONS

†: equal contribution.

- [1] **T. Deng**[†], K. Xu, Y. Xu, Y. Hu, Z. Liu, S. Chen, H. Wu, and X. Sun[†], “LEGEND: An integrative algorithm for identifying co-expressed and cofunctional genes in multimodal transcriptomic sequencing data,” *Under Review*, Jun. 2023, [[Python package](#)].
- [2] **T. Deng**[†], S. Chen, Y. Zhang, Y. Xu, D. Feng, H. Wu, and X. Sun[†], “A cofunctional grouping-based approach for non-redundant feature gene selection in unannotated single-cell RNA-seq analysis,” *Briefings in Bioinformatics*, vol. 24, no. 2, bbad042, Feb. 2023, [[DOI](#)][[Python package](#)].
- [3] S. Liang, **T. Deng**, A. Huang, N. Liu, and X. Jiang, “Energy consumption prediction using the gru-mattention-lightgbm model with features of prophet decomposition,” *PloS one*, vol. 18, no. 1, e0277085, Jan. 2023, [[DOI](#)].
- [4] **T. Deng**, M. Wan, K. Shi, L. Zhu, X. Wang, and X. Jiang, “Short term prediction of wireless traffic based on tensor decomposition and recurrent neural network,” *SN Applied Sciences*, vol. 3, no. 9, pp. 1–14, Aug. 2021, [[DOI](#)].

PROJECTS

Investigating the Double Descent Phenomenon in Neural Networks May 2023 – Jun. 2023

- Reproduced a [CVPR 2022 paper](#) focusing on the decision boundaries and double descent of neural networks.
- Co-authored a paper that reported reproducing results and analyzed double descent using random matrix theory.

Benchmarking Feature Selection Methods for Multimodal Transcriptomics [[code](#)] Mar. 2021 – Jan. 2023

- Compiled prevalent feature selection methods in scRNA-seq/spatial transcriptomics data analyses.
- Developed a pipeline for streamlined comparative experiments and efficient result storage.

The L^AT_EX Template for Bachelor’s Thesis at ZUEL [[code](#)] Mar. 2022

- Acquired fundamental L^AT_EX commands and crafted a L^AT_EX template for the bachelor’s thesis within one week.

Batch Effect Removal Using Generative Adversarial Networks (GANs) Feb. 2021 – Mar. 2021

- Investigated the performance of GANs in removing batch effects from scRNA-seq datasets.

Server Management for Research Teams Dec. 2020 – Present

- Managed both an Amazon cloud server running CentOS and a physical server running Ubuntu.
- Gained expertise in configuring and deploying cloud servers, creating and utilizing AMIs, among other cloud computing tasks.
- Took charge of software deployment, systems security, user governance, and resource management.

HONORS AND AWARDS

Outstanding Bachelor’s Thesis Award from ZUEL	2022
Outstanding Project in National College Student Innovation Training Program	2021
National Encouragement Scholarship	2021, 2019
Second Prize in the Provincial Contemporary Undergraduate Mathematical Contest in Modeling	2020, 2019
“Wutong Tree” Encouragement Scholarship	2019

TEACHING EXPERIENCES

STA2001 Probability and Statistics I - <i>teaching assistant</i>	2023
STA2003 Probability - <i>teaching assistant</i>	2022