

# Hu Chen

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| <b>EDUCATION</b>               | <b>Shandong University</b> , Jinan, P.R.China<br><i>Master of Science in Data Science</i>   | September 2021 - Present<br>Expected: June 2024 |
|                                | <b>Shandong University</b> , Jinan, P.R.China<br><i>Bachelor of Science in Mathematics and Applied Mathematics</i>  | September 2017 - June 2021                      |
| <b>RESEARCH<br/>EXPERIENCE</b> | <b>BMBL Lab, OSU, Qin Ma</b>  | October 2023 - Present                          |
|                                | <ul style="list-style-type: none"><li>Employing cutting-edge technology to identify phenotype-related cells for immunotherapies using spatial omics data.</li></ul>   |   |
|                                | <b>School of Mathematics, SDU, Bingqiang Liu</b>  | October 2023 - Present                          |
|                                | <ul style="list-style-type: none"><li>Exploring the potential of domain adaptation techniques to enhance the accuracy of predicting optimal doses using bulk and single-cell RNA data.</li></ul>  |   |
|                                | <b>Data Science Institute, SDU</b>  | March 2023 - June 2023                          |
|                                | <ul style="list-style-type: none"><li>Working on drug target interaction. Employing an attention-based deep learning model for the prediction of drug target interaction under out-of-distribution scenario, facilitating the identification of critical drug atom and amino acid involvement in affinity determination.</li></ul>  |   |
|                                | <b>Zhejiang Lab</b><br>Intern, Graph Computation Center   | August 2022 - January 2023                      |
|                                | <ul style="list-style-type: none"><li>Contributed to the molecular property prediction. Evaluated on a quantum chemistry dataset PCQM4Mv2 as part of OGB Large-Scale Challenge 2022 (OGB-LSC 2022), a graph machine learning competition.</li><li>Designed and implemented a hybrid graph neural network (GNN) model that incorporated both 2D topological structure and 3D conformation information into message passing.</li><li>Achieved efficient training on about 3 million molecules using PyTorch Distributed Data Parallel (DDP) and ranked 11th on the final leaderboard with only 24 hours of training time.</li></ul> |   |
| <b>PROJECTS<br/>EXPERIENCE</b> | <b>KuiperInfer</b> as a contributor   | March 2023 - May 2023                           |
|                                | <ul style="list-style-type: none"><li>Collaborated with a team of developers to create a custom-built deep learning inference framework using C++17 from scratch.</li><li>Implemented various features such as model loading, computation graph construction and execution.</li></ul>   |   |
|                                | <b>HPC for graphs</b> with Dr. Guanghui Wang  | July 2021 - October 2021                        |
|                                | <ul style="list-style-type: none"><li>Designed efficient graph algorithms to find and count cycles in graphs under constrained conditions such as cycle length and edge weight.</li><li>Used breadth-first search (BFS) and queue techniques to store potential paths that make up the cycle and optimized them with OpenMP parallel library in C++.</li><li>Achieved expected performance and completed the acceptance test of the cooperative company.</li></ul>  |   |
| <b>TEACHING<br/>EXPERIENCE</b> | SDU Linear Algebra, <i>Teaching Assistant</i>   | Spring 2023                                     |
|                                | SDU Calculus II, <i>Teaching Assistant</i>  | Fall 2021                                       |

**PUBLICATIONS**

- Li L, Chen H, et al. The K-Core Decomposition Algorithm Under the Framework of GraphBLAS. In 2021 IEEE High Performance Extreme Computing Conference (HPEC) 2021 Sep 20 (pp. 1-7). IEEE.

**HONORS**

2022 SDU First Prize of Graduate Scholarship

**REWARDS**

2021 Third Prize of “Huawei Cup” The 18th China Post-Graduate Mathematical Contest in Modeling

2021 Excellent Graduate of Shandong Province

2020,2019,2018 SDU Third Prize of Undergraduate Scholarship

2019,2018 Third Prize of National College Student Mathematics Competition

**SKILLS**

**Programming:** Python, C++, CUDA, R

**Deep Learning Framework:** Pytorch

**Tools:** VS Code