

## Hu Chen

<https://tigerrr07.github.io/tiger-website>

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+(86) 156-6583-8670

EDUCATION	<b>Shandong University</b> , Jinan, P.R.China	September 2021 - Present
	<i>Master of Science in Data Science</i> GPA: 88.46/100	Expected: June 2024
	<b>Shandong University</b> , Jinan, P.R.China	September 2017 - June 2021
	<i>Bachelor of Science in Mathematics and Applied Mathematicse</i> GPA: 88.39/100	
RESEARCH EXPERIENCE	<b>SDU Data Science Institute</b>	February 2023 - Present
	Worked on <i>Drug Target Interaction</i> <ul style="list-style-type: none"><li>• Implemented and evaluated different models for drug-target interaction prediction, using PyTorch. The models were based on GNNs, CNNs and Transformers.</li><li>• Explored the effects of different attention mechanisms on task performance.</li><li>• Studied out-of-distribution problems and proposed possible improvements by transfer learning or invariant learning.</li></ul>	
INDUSTRY EXPERIENCE	<b>Zhejiang Lab</b>	August 2022 - January 2023
	Intern, Graph Computation Center <ul style="list-style-type: none"><li>• Contributed to the OGB Large-Scale Challenge 2022 (OGB-LSC 2022), a graph machine learning competition, to predict HOMO-LUMO gap property of molecules on the quantum chemistry dataset PCQM4Mv2 with three colleagues.<ul style="list-style-type: none"><li>– Designed and implemented a hybridGNN 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></li><li>• Built a medical knowledge graph that contained entities such as drugs, proteins, gene ontology, diseases and their relationships using various data sources and extraction methods.</li></ul>	
	<b>Huawei Technologies Co., Ltd.</b>	March 2021 - June 2021
	Intern, Theory Lab <ul style="list-style-type: none"><li>• Developed a novel graph algorithm based on linear algebra to find the k-Core of a graph, which is the largest subgraph where every node has degree at least k.</li><li>• Implemented the algorithm using CUDA on GPU and optimized its performance using various techniques such as atomic operation and shared memory usage.</li><li>• Outperformed baselines provided by 2 to 4 times on several real-world graphs with different sizes and densities.</li></ul>	
PROJECTS EXPERIENCE	<b>KuiperInfer</b> as a contributor	March 2023 - Present
	<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></ul>	

- 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++.
- Achieved expected performance and completed the acceptance test of the cooperative company.

## TEACHING EXPERIENCE

SDU Linear Algebra, *Teaching Assistant*  
SDU Calculus II, *Teaching Assistant*

Spring 2023  
Fall 2021

## HONORS REWARDS

2022 SDU First Prize of Graduate Scholarship  
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

## COMPUTER SKILLS

**Programming:** Python, C++, CUDA  
**Frameworks:** Pytorch  
**Tools:** Linux, VScode, Git, Github