

1st-year Ph.D.

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EDUCATION

2024.6 - Present	Ph.D. at ZJU, Advisor: Yang Yang
2022.8 - 2022.12	Exchange(CompE) at UIUC
2020.9 - 2024.6	B.A. in CompE, ZJUI
2017.9 - 2020.6	Shandong Experimental High School (Senior High)

I started learning programming and algorithms in high school. After a year of study, I achieved the first prize in Shandong Province in the National Junior Informatics Olympiad NOIP2018. The experience of studying informatics competitions has given me strong independent learning ability and I have developed a stronger interest in the computer engineering.

I completed my undergraduate studies at the ZJU-UIUC Institute, majoring in Computer Engineering (CompE), and earned dual Bachelor's degrees in Engineering from Zhejiang University and The Grainger College of Engineering at the University of Illinois at Urbana-Champaign (UIUC). In 2022, I participated in an exchange program at UIUC.

PUBLICATIONS

Junru Chen, Tianyu Cao, Jing Xu, **Jiahe Li**, Zhilong Chen, Tao Xiao, and Yang Yang. Con4m: Context-aware Consistency Learning Framework for Segmented Time Series Classification. In Proceedings of the Thirty-Eighth Annual Conference on Neural Information Processing Systems (NeurIPS'24), 2024.

Haoran Deng, Yang Yang, **Jiahe Li**, Cheng Chen, Weihao Jiang, and Shiliang Pu. Fast Updating Truncated SVD for Representation Learning with Sparse Matrices. In Proceedings of the 13th International Conference on Learning Representations (ICLR'24), 2024.

Haoran Deng, Yang Yang, **Jiahe Li**, Haoyang Cai, Shiliang Pu, and Weihao Jiang. Accelerating Dynamic Network Embedding with Billions of Parameter Updates to Milliseconds. In Proceedings of the Twenty-Ninth ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'23), 2023.

MAJOR AWARDS

2021	National Scholarship of China
2021	Outstanding student association leader of Zhejiang University
2021	Model of Social Work of Zhejiang University
2021	Model of Academic Excellence of Zhejiang University
2021	Dean's List of ZJU-UIUC Institute
2022	Zhejiang Provincial Government Scholarship
2022	Outstanding student association leader of Zhejiang University
2022	Model of Social Work of Zhejiang University
2022	Model of Academic Excellence of Zhejiang University
2022	Dean's List of ZJU-UIUC Institute
2022	The Mathematical Contest in Modeling (MCM) - Honorable Mention
2023	National Scholarship of China
2023	Five-Star Volunteer of Zhejiang University
2023	Model of Public Service of Zhejiang University
2023	Model of Innovation of Zhejiang University
2023	Model of Foreign Exchange of Zhejiang University
2023	Model of Academic Excellence of Zhejiang University
2023	Dean's List of ZJU-UIUC Institute
2024	Outstanding Graduate of Zhejiang Province
2024	Outstanding Graduate of Zhejiang University

RESEARCH EXPERIENCE

2023.1 - 2024.1 **Dynamic Network Embedding at AINet Lab, ZJU**
Advisor: Prof. Yang Yang, ZJU

We propose the Dynamic Adjacency Matrix Factorization (DAMF) algorithm, which achieves an efficient and accurate dynamic network embedding by rotating and scaling the coordinate system where the network embedding resides with no more than the number of edge modifications changes of node embeddings. Moreover, a dynamic Personalized PageRank is applied to the obtained network embeddings to enhance node embeddings and capture higher-order neighbor information dynamically. We unprecedentedly expand dynamic network embedding experiments to billion-edge graphs, where DAMF updates billion-level parameters in less than 10ms.

2022.6 - 2022.8 Container Vulnerability Reachability at NESA Lab, ZJU

Advisor: Prof. Xuhong Zhang and Shouling Ji, ZJU

Bloated dependencies are libraries that are packed with the compiled code of an application but are not required to create and run the application. DepClean is a way to automatically clean up a Java project's dependency tree and remove dependencies that are not necessary for building the project. My team members and I learned about this method during our summer research and proposed an optimization that shrinks the unit of dependency study from a file to a function.

2021.6 - 2022.3 Path ORAM (Cryptography) at ABC Lab, ZJU

Advisor: Prof. Jian Liu, ZJU

Oblivious RAM hides the memory access pattern by using extra bandwidth and memory overhead. Path ORAM stores memory blocks on a binary tree's random branch. Because the blocks are positioned on distinct branches, repeated procedures reveal no information. rORAM is an optimization of Path ORAM to achieve faster interval queries by saving multiple binary trees. Another spatial optimization of Path ORAM is to use B-tree instead of linear position map storage. After studying, I found that by combining the two optimizations, I can take full advantage of both and make progress in both time and space.

EXTRACURRICULAR ACTIVITIES

2020.9 - 2022.9 President of Room78 Algorithm Club, Zhejiang University

In my freshman year, I, as the founder, led like-minded students to create the Room78 Algorithm Club. I worked as the **president of Room78** during my 1st and 2nd years and conducted many algorithm discussions and activities. The club was awarded as the outstanding club in 2021. I was awarded as the outstanding club leader in 2021, 2022.

2021.7 - 2022.2 Security Consultant of Hepta Workshop, ZJU-UIUC Institute

I have been one of the security consultants for Hepta Workshop since 2021, contributing the security foundation in [Email Server](#) build.

2015.4 - Present Museum Docent at Shandong Museum

In 2015, I joined the Shandong Museum Volunteer Docent Team. I have accumulated more than 300 hours of volunteer service. After leaving my hometown for college, I still use my summer and winter time for volunteer work.