

HAITIAN (HILTON) JIANG

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🎓 EDUCATION

New York University

Sep. 2023 – Present

Ph.D. in Computer Science

New York, NY

Advisor: Prof. Jinyang Li & Prof. Aurojit Panda

Research Interest: Machine Learning, Systems for Machine Learning, Graph Neural Networks

Fudan University

Sep. 2019 – Jun. 2023

B.S. in Data Science (Summa Cum Laude)

Shanghai, China

Advisor: Prof. Zengfeng Huang

University of California, San Diego (UCSD)

Sep. 2021 – Dec. 2021

Exchange Student, Computer Science and Engineering

La Jolla, CA

📖 PUBLICATION

- **MuseGNN: Interpretable and Convergent Graph Neural Network Layers at Scale.**
Haitian Jiang, Renjie Liu, Xiao Yan, Zhenkun Cai, Minjie Wang, David Wipf.
Under review for ICLR' 2024.
- **Simplifying and Empowering Transformers for Large-Graph Representations.**
Qitian Wu, Wentao Zhao, Chenxiao Yang, Hengrui Zhang, Fan Nie, Haitian Jiang, Yatao Bian, Junchi Yan.
NeurIPS' 2023.
- **ReFresh: Reducing Memory Access from Exploiting Stable Historical Embeddings for Graph Neural Network Training.**
Kezhao Huang, Haitian Jiang* (Equal Contribution), Minjie Wang, Guangxuan Xiao, David Wipf, Xiang Song, Quan Gan, Zengfeng Huang, Jidong Zhai, Zheng Zhang.*
Revision for VLDB' 2024.

💻 RESEARCH & INTERN EXPERIENCES

Systems Group, New York University

Sep. 2023 – Present

Research Assistant | Machine Learning Systems

New York

Advisor: Prof. Jinyang Li & Prof. Aurojit Panda

- **Automatic Searching for Kernel Fusion and Scheduling**

DGL Group, Amazon Web Services (AWS) AI Lab

Jun. 2022 – Aug. 2023

Applied Scientist Intern | Machine Learning Theory and System

Shanghai

Advisor: David Wipf & Minjie Wang

- **FreshGNN:** Graph Neural Network (GNN) training system with historical cache
 - Accelerated and scaled up GNN training on large graphs with a selective historical cache to reduce computation and data movement.
 - Designed managing policies based on gradients and staleness for cached nodes.
- **MuseGNN:** Interpretable and Convergent Graph Neural Network Layers at Scale
 - Expanded a widely-used unfolded GNN framework to incorporate offline sampling into the architecture-inducing energy function design.
 - Demonstrated the model possess convergence properties of the bi-level optimization process.
 - Empirically extended the unfolded GNN framework to large graphs and achieved SOTA performance for homogeneous graph models applied to the largest open graph dataset.

TRAIL Lab, Fudan University

Research Assistant | Graph Neural Network

Advisor: Prof. Zengfeng Huang

Jan. 2022 – Oct. 2022

Shanghai

- **Scalable Graph Neural Networks using Subgraph Summarization**

- Proposed a sub-graph sampling method that can cooperate with graph coarsening algorithms to reduce the size of sub-graphs by 30%.
- Scaled up GNN training: implemented both pre-processing and training on multi-GPU; reduced the training time on papers100M from over 10 minutes to 27s for one epoch.

McAuley Lab, University of California, San Diego

Research Assistant | Recommender System, Natural Language Processing

Advisor: Prof. Julian McAuley

Oct. 2021 – Aug. 2022

La Jolla

- **Recommendation System with Faithful Textual Explanation**

- Evaluated current text-based recommenders through aspect-based sentiment analysis and found the text cannot faithfully explain ratings as popular and positive aspects dominate the text.
- Designed a metric of faithfulness for recommendation explanation by learning and comparing the mapping from explanations to predicted ratings in order to measure the issue.
- Designed and implemented a new pipeline that first generate text explanations of recommendations and then use the text to predict faithful ratings

Keen Lab, Tencent Technology

IoT Security Intern | Reverse Engineering

- Collected, reproduced and exploited vulnerabilities (CVE) of IoT devices; conducted reverse-engineering on the firmware of devices.
- Implemented a crawler system using Scrapy, PostgreSQL, and message queue (RMQ) to automatically gather information of the products and download firmware.

Feb. 2021 – Jul. 2021

Shanghai, China



TEACHING EXPERIENCE

- TA for Algorithm and Data Structures (Honor), DATA130023H (Fall 2022), Fudan University
- TA for Advanced Big Data Analytics, DATA130014 (Spring 2023), Fudan University



HONORS & AWARDS

Henry M. MacCracken Fellowship	2023
China National Scholarship (top 1%)	2021
National Second Prize (top 3%), CUMCM (Contemporary Undergraduate Mathematical Contest in Modeling)	2020
Second Prize Scholarship of Fudan University (top 10 %)	2020



SKILLS

Languages: Mandarin (Native speaker), English (Fluent)

Programming: Python, C/C++, CUDA, Go, MATLAB, R, SQL, PHP, Bash

Frameworks: Linux, Git, PyTorch, GPU programming, OpenMP, Spark, Docker, Web Crawler