

Self-Introduction

I am a Ph.D. candidate in Department of Computer Science and Engineering at the Hong Kong University of Science and Technology (HKUST), advised by Prof. Kai Chen. I received my B.E. degree in computer science from Huazhong University of Science and Technology (HUST) in 2018. My research interests focus on hardware acceleration, distributed machine learning system, and data center network. I am particularly interested in designing high-performance machine learning systems for newly emerged models, including MoE and LLMs.

Education

- 2018.9 - present **Hong Kong University of Science and Technology**, *PhD Candidate*, Computer Science and Engineering
 - Advisor: Prof. Kai Chen
- 2014.9 - 2018.6 **Huazhong University of Science and Technology**, *BEng.*, Computer Science and Technology
 - Advisor: Prof. Song Wu

Research Interests

- Machine Learning Systems
- Datacenter Networking
- Hardware Acceleration

Publications

Conference Proceedings

- [1] Xudong Liao, Han Tian, Chaoliang Zeng, **Xinchen Wan**, and Kai Chen. Astraea: towards fair and efficient learning-based congestion control. In *ACM EuroSys*, 2024.
- [2] Hao Wang, Han Tian, Jingrong Chen, **Xinchen Wan**, Jiacheng Xia, Gaoxiong Zeng, Wei Bai, Junchen Jiang, Yong Wang, and Kai Chen. Towards domain-specific network transport for distributed dnn training. In *USENIX NSDI*, 2024.
- [3] Zilong Wang, **Xinchen Wan**, Luyang Li, Yijun Sun, Peng Xie, Xin Wei, Qingsong Ning, Junxue Zhang, and Kai Chen. Fast, scalable, and accurate rate limiter for rdma nics. In *ACM SIGCOMM*, 2024.
- [4] Chaoliang Zeng, Xudong Liao, Xiaodian Cheng, Han Tian, **Xinchen Wan**, Hao Wang, and Kai Chen. Accelerating neural recommendation training with embedding scheduling. In *USENIX NSDI*, 2024.
- [5] **Xinchen Wan**, Kaiqiang Xu, Xudong Liao, Yilun Jin, Kai Chen, and Xin Jin. Scalable and efficient full-graph gnn training for large graphs. In *ACM SIGMOD*, 2023.
- [6] Zilong Wang, Layong Luo, Qingsong Ning, Chaoliang Zeng, Wenxue Li, **Xinchen Wan**, Peng Xie, Tao Feng, Ke Cheng, Xiongfei Geng, et al. Srnic: a scalable architecture for rdma nics. In *USENIX NSDI*, 2023.
- [7] Zilong Wang, **Xinchen Wan**, Chaoliang Zeng, and Kai Chen. Accurate and scalable rate limiter for rdma nics. In *ACM APNet*, 2023.

- [8] **Xinchen Wan**, Kai Chen, and Yiming Zhang. Dgs: communication-efficient graph sampling for distributed gnn training. In *IEEE ICNP*, pages 1–11. IEEE, 2022.
- [9] **Xinchen Wan**, Hong Zhang, Hao Wang, Shuihai Hu, Junxue Zhang, and Kai Chen. Rat-resilient allreduce tree for distributed machine learning. In *ACM APNet*, pages 52–57, 2020.

Journal Articles

- [1] Kaiqiang Xu, **Xinchen Wan**, Hao Wang, Zhenghang Ren, Xudong Liao, Decang Sun, Chao-liang Zeng, and Kai Chen. Tacc: a full-stack cloud computing infrastructure for machine learning tasks. *arXiv preprint arXiv:2110.01556*, 2021.
- [2] Hao Wang, Jingrong Chen, **Xinchen Wan**, Han Tian, Jiacheng Xia, Gaoxiong Zeng, Weiyan Wang, Kai Chen, Wei Bai, and Junchen Jiang. Domain-specific communication optimization for distributed dnn training. *arXiv preprint arXiv:2008.08445*, 2020.

Industrial Experiences

Nov 2021 - Research Intern, Hardware Acceleration Group *ByteDance, Beijing*
 Aug 2023

Worked with Dr. Layong Luo. Design an RDMA-based AI Interconnect network, and a generic and efficient platform for Message-level In-Network Computing.

Awards

2018-now	Postgraduate Studentship	<i>HKUST</i>
2017	Chinese National Scholarship	<i>Ministry of Education</i>
2016	Learning Excellence Scholarship (Top 2 students in CS department)	<i>HUST</i>
2015	Outstanding Student Cadres Scholarship	<i>HUST</i>

Talks

2023	Scalable and Efficient Full-Graph GNN Training for Large Graphs	<i>Seattle, USA</i>
2022	DGS: Communication-Efficient Graph Sampling for Distributed GNN Training	<i>Online</i>
2020	Rat-resilient allreduce tree for distributed DNN training	<i>Online</i>

Teaching Experiences

2019 Fall - Teaching Assistant Coordinator at HKUST CSE
 2021 Spring
 2023 Spring Teaching Assistant of HKUST COMP1022Q Excel VBA

Skills

Languages Mandarin Chinese (native), English
 Program- C/C++, Python, Go, C#, \LaTeX , Bash scripts
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