

Xinchen Wan

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Education

- 2018.9 - **Hong Kong University of Science and Technology**, *Ph.D.*, Computer Science & Engineering
2025.2 ○ Advisor: Prof. Kai Chen
 ○ Thesis: *Towards Communication-Efficient Distributed Training Systems*
- 2014.9 - **Huazhong University of Science and Technology**, *BEng.*, Computer Science & Technology
2018.6 ○ Advisor: Prof. Song Wu

Research Interests

- Machine Learning Systems
- Hardware Acceleration
- Datacenter Networking

Industrial Experiences

- Jun 2025 - Research Engineer, High Speed Network ByteDance USA, Seattle
Present
Working on building next-generation AI network.
- 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.

Publications

Conference Proceedings

- [1] Luyang Li, Heng Pan, **Xinchen Wan**, Kai Lv, Zilong Wang, Qian Zhao, Feng Ning, Qingsong Ning, Shideng Zhang, Zhenyu Li, Layong Luo, and Gaogang Xie. Harmonia: a unified framework for heterogeneous fpga acceleration in the cloud. In *Proceedings of the 30th ACM International Conference on Architectural Support for Programming Languages and Operating Systems*, ASPLOS, 2025.
- [2] Xudong Liao, Han Tian, **Xinchen Wan**, Chaoliang Zeng, Hao Wang, Junxue Zhang, Mengyu Ma, Guyue Liu, and Kai Chen. Towards optimal rack-scale μ s-level cpu scheduling through in-network workload shaping. In *Proceedings of USENIX Annual Technical Conference*, ATC, 2025.
- [3] Han Tian, Xudong Liao, Decang Sun, Chaoliang Zeng, Yilun Jin, Junxue Zhang, **Xinchen Wan**, Zilong Wang, Yong Wang, and Kai Chen. Achieving fairness generalizability for learning-based congestion control with jury. In *Proceedings of the 20th ACM European Conference on Computer Systems*, EuroSys, 2025.
- [4] **Xinchen Wan**, Luyang Li, Han Tian, Xudong Liao, Xinyang Huang, Chaoliang Zeng, Zilong Wang, Xinyu Yang, Ke Cheng, Qingsong Ning, Guyue Liu, Layong Luo, and Kai Chen. A generic and efficient communication framework for message-level in-network computing. In *Proceedings of the IEEE International Conference on Computer Communications*, INFOCOM, 2025.

- [5] Kaiqiang Xu, Decang Sun, Hao Wang, Zhenghang Ren, **Xinchen Wan**, Xudong Liao, Zilong Wang, Junxue Zhang, and Kai Chen. Design and operation of shared machine learning clusters on campus. In *Proceedings of the 30th ACM International Conference on Architectural Support for Programming Languages and Operating Systems, ASPLOS*, 2025.
- [6] Xudong Liao, Han Tian, Chaoliang Zeng, **Xinchen Wan**, and Kai Chen. Astraea: towards fair and efficient learning-based congestion control. In *Proceedings of the 19th ACM European Conference on Computer Systems, EuroSys*, 2024.
- [7] 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 *Proceedings of the 21st USENIX Symposium on Networked Systems Design and Implementation, NSDI*, 2024.
- [8] 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 *Proceedings of the ACM Special Interest Group on Data Communication, SIGCOMM*, 2024.
- [9] Chaoliang Zeng, Xudong Liao, Xiaodian Cheng, Han Tian, **Xinchen Wan**, Hao Wang, and Kai Chen. Accelerating neural recommendation training with embedding scheduling. In *Proceedings of the 21st USENIX Symposium on Networked Systems Design and Implementation, NSDI*, 2024.
- [10] **Xinchen Wan**, Kaiqiang Xu, Xudong Liao, Yilun Jin, Kai Chen, and Xin Jin. Scalable and efficient full-graph gnn training for large graphs. In *Proceedings of the ACM on Management of Data, SIGMOD*, 2023.
- [11] Zilong Wang, Layong Luo, Qingsong Ning, Chaoliang Zeng, Wenxue Li, **Xinchen Wan**, Peng Xie, Tao Feng, Ke Cheng, Xiongfei Geng, et al. Srdnic: a scalable architecture for rdma nics. In *Proceedings of the 20th USENIX Symposium on Networked Systems Design and Implementation, NSDI*, 2023.
- [12] Zilong Wang, **Xinchen Wan**, Chaoliang Zeng, and Kai Chen. Accurate and scalable rate limiter for rdma nics. In *Proceedings of the 7th Asia-Pacific Workshop on Networking, APNet*, 2023.
- [13] **Xinchen Wan**, Kai Chen, and Yiming Zhang. Dgs: communication-efficient graph sampling for distributed gnn training. In *Proceedings of the 30th IEEE International Conference on Network Protocols, ICNP*, 2022.
- [14] **Xinchen Wan**, Hong Zhang, Hao Wang, Shuihai Hu, Junxue Zhang, and Kai Chen. Rat-resilient allreduce tree for distributed machine learning. In *Proceedings of the 4th Asia-Pacific Workshop on Networking, APNet*, 2020.

Journal Articles

- [1] Kaiqiang Xu, **Xinchen Wan**, Hao Wang, Zhenghang Ren, Xudong Liao, Decang Sun, Chaoliang 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.

Academic Services

- 2025 IEEE/ACM Transactions on Networking (ToN) reviewer
- 2022 IEEE Transactions on Computers (TC) reviewer

Awards

2018-2025	Postgraduate Student Scholarship	HKUST
2017	Chinese National Scholarship	Ministry of Education
2016	Learning Excellence Scholarship (Top 2 students in CS department)	HUST
2015	Outstanding Student Cadres Scholarship	HUST

Talks

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

Teaching Experiences

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

Skills

Language	Mandarin Chinese (native), English (proficiency)
Program- ming	C/C++, Python, Go, \LaTeX , Bash scripts