

曾高雄 - Gaoxiong Zeng

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个人简介 Short Bio

曾高雄, 现任华为 2012 实验室网络技术实验室研究员 (天才少年计划)。他于 2022 年获得香港科技大学计算机科学与工程博士学位, 师从陈凯教授。此前, 他于 2015 年获得中国科学技术大学电子工程学士学位。他对计算机网络与系统有着广泛的兴趣。研究发明专利近十项, 论文成果二十余项, 发表在 SIGCOMM、NSDI、HPCA、INFOCOM、ICNP 和 ToN 等顶级国际会议和期刊。

Gaoxiong Zeng is a scientific researcher with Huawei 2012 Labs. He received his Ph.D. in computer science and engineering from Hong Kong University of Science and Technology in 2022, where he worked with Prof. Kai Chen. Before that, he received his B.E. in electronic engineering from University of Science and Technology of China in 2015. He is broadly interested in computer networks and systems. His work has been published on various top venues such as SIGCOMM, NSDI, HPCA, INFOCOM, ICNP, and ToN, etc.

履历 Experiences

华为 2012 网络技术实验室 Huawei 2012 Labs Network Technology Lab

深圳 Shenzhen

研究员 *Scientific Researcher*

2022 - Present

- 面向灵衢智算网络, 构建了 AI 原生传输协议 (ANT) 技术体系, 提出数控分离 DCP 技术, 打破高性能网络 lossy 与 lossless 的路线之争, 通过 lossless control 和 lossy data 结合的思想, 以极低代价实现极高性能; 布局专利 4 项, 相关成果获评 sigcomm best student paper (honorable mention)、ODCC 卓越成果奖等。
- 面向数据中心网络, 构建了 NetiRDMA 下一代 RDMA 传输技术体系, 提出 G-RDMA 拥塞控制算法, 在网络无依赖场景下实现精准控速; 提出 Cepheus-CC 解决 RDMA 组播拥塞控制问题等。
- 面向数据中心广域网, 提出 NetiSpeeder 分段式传输技术, 解决异构网络分段最优化传输的问题。

香港科技大学 Hong Kong University of Science and Technology (HKUST)

香港 Hong Kong

博士 *Ph.D. in Computer Science and Engineering*

2015 - 2022

Advisor: Prof. Kai Chen.

中国科学技术大学 University of Science and Technology of China (USTC)

合肥 Hefei

本科 *B.E. in Electronic Engineering and Information Science*

2011 - 2015

研究领域 Research Interest

计算机网络与系统: AI 智算网络优化, 传输协议, 高性能网络 (RDMA), 数据中心网络等

Computer Networks & Systems: AI-Centric Network; Transport Protocols; RDMA; DCN; etc.

代表性工作 Selected Works

会议与期刊 Conference & Journal:

- Wenxue Li, Xiangzhou Liu, Yunxuan Zhang, Zihao Wang, Wei Gu, Tao Qian, **Gaoxiong Zeng**, Shoushou Ren, Xinyang Huang, Zhenghang Ren, Bowen Liu, Junxue Zhang, Kai Chen, Bingyang Liu. "Revisiting RDMA Reliability for Lossy Fabrics", in Proceedings of the Annual Conference of the ACM Special Interest Group on Data Communication (**SIGCOMM**), 2025.
[*Best Student Paper Honorable Mention*]
- Wenxue Li, Junyi Zhang, Yufei Liu, **Gaoxiong Zeng**, Zilong Wang, Chaoliang Zeng, Pengpeng Zhou, Qiaoling Wang, Kai Chen. "High-Performance RoCE-Capable Multicast for Commodity RDMA Datacenters", in

IEEE Transactions on Networking (**ToN**), 2025.

- Hao Wang, Han Tian, Jingrong Chen, Xinchun Wan, Jiacheng Xia, **Gaoxiong Zeng**, Wei Bai, Junchen Jiang, Yong Wang, 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.
- Zuo Gan, Chen Chen, Jiayi Zhang, **Gaoxiong Zeng**, Yifei Zhu, Jieru Zhao, Quan Chen, Minyi Guo. “PAS: Towards Accurate and Efficient Federated Learning with Parameter-Adaptive Synchronization”, in Proceedings of the IEEE/ACM International Symposium on Quality of Service (**IWQoS**), 2024.
- Wenxue Li, Junyi Zhang, Yufei Liu, **Gaoxiong Zeng**, Zilong Wang, Chaoliang Zeng, Pengpeng Zhou, Qiaoling Wang, Kai Chen. “Cepheus: Accelerating Datacenter Applications with High-Performance RoCE-Capable Multicast”, in Proceedings of the IEEE International Symposium on High Performance Computer Architecture (**HPCA**), 2024.
- Yuchao Zhang, Haoqiang Huang, Ahmed M. Abdelmoniem, **Gaoxiong Zeng**, Xirong Que, Wendong Wang, Ke Xu. “FLAIR: A Fast and Low-Redundancy Failure Recovery Framework for Inter Data Center Network”, in IEEE Transactions on Cloud Computing (**TCC**), 2024.
- **Gaoxiong Zeng**, Li Chen, Bairen Yi, Kai Chen. “Cutting Tail Latency in Commodity Datacenters with Cloudburst”, in Proceedings of the 41th IEEE International Conference on Computer Communications (**INFOCOM**), 2022.
- **Gaoxiong Zeng**, Wei Bai, Ge Chen, Kai Chen, Dongsu Han, Yibo Zhu, Lei Cui. “Congestion Control for Cross-Datacenter Networks”, in IEEE/ACM Transactions on Networking (**ToN**), 2022.
- Shuihai Hu, **Gaoxiong Zeng**, Wei Bai, Zilong Wang, Baochen Qiao, Kai Chen, Kun Tan, Yi Wang. “Aeolus: A Building Block for Proactive Transport in Datacenter Networks”, in IEEE/ACM Transactions on Networking (**ToN**), 30(2), 2022.
- **Gaoxiong Zeng**, Jianxin Qiu, Yifei Yuan, Hongqiang Liu, Kai Chen. “FlashPass: Proactive Congestion Control for Shallow-buffered WAN”, in Proceedings of the 29th IEEE International Conference on Network Protocols (**ICNP**), 2021.
- Shuihai Hu, Wei Bai, **Gaoxiong Zeng**, Zilong Wang, Baochen Qiao, Kai Chen, Kun Tan, Yi Wang. “Aeolus: A Building Block for Proactive Transport in Datacenters”, in Proceedings of the Annual Conference of the ACM Special Interest Group on Data Communication (**SIGCOMM**), 2020.
- **Gaoxiong Zeng**, Shuihai Hu, Junxue Zhang, Kai Chen. “Transport Protocols for Data Center Networks: A Survey”, in ICT-CAS/CCF Journal of Computer Research and Development (**J-CRAD**), 57(1), 2020.
- **Gaoxiong Zeng**, Wei Bai, Ge Chen, Kai Chen, Dongsu Han, Yibo Zhu, Lei Cui. “Congestion Control for Cross-Datacenter Networks”, in Proceedings of the 27th IEEE International Conference on Network Protocols (**ICNP**), 2019.
- Jiacheng Xia, **Gaoxiong Zeng**, Junxue Zhang, Weiyan Wang, Wei Bai, Junchen Jiang, Kai Chen. “Rethinking Transport Layer Design for Distributed Machine Learning”, in Proceedings of the 3rd ACM Asia-Pacific Workshop on Networking (**APNet**), 2019.
- **Gaoxiong Zeng**, Wei Bai, Ge Chen, Kai Chen, Dongsu Han, Yibo Zhu. “Combining ECN and RTT for Datacenter Transport”, in Proceedings of the 1st ACM Asia-Pacific Workshop on Networking (**APNet**), 2017.
- Shuihai Hu, Kai Chen, **Gaoxiong Zeng**. “Improved Path Compression for Explicit Path Control in Production Data Centers”, in Poster Session of the 13th USENIX Symposium on Networked Systems Design and Implementation (**NSDI**), 2016.

其他 Miscellaneous:

- “NetiSpeeder: In-Network Congestion Control for Heterogeneous Inter-Datacenter Networks”, in submission.
- “Message-level Congestion Control for AI Workloads with Packet Spraying”, in submission.

学术兼职 Professional Services

[程序委员会 Program Committee]	<i>ACM CoNEXT Workshop on INCAS 2025</i>
[程序委员会 Program Committee]	<i>ACM Asia-Pacific Workshop on Networking - APNet Poster 2024</i>
[程序委员会 Program Committee]	<i>ACM Asia-Pacific Workshop on Networking - APNet Poster 2023</i>
[审稿人 Reviewer]	<i>IEEE International Conference on Computer Communications (INFOCOM)</i>
[审稿人 Reviewer]	<i>IEEE/ACM Transactions on Networking (ToN)</i>
[审稿人 Reviewer]	<i>IEEE Transactions on Cloud Computing (TCC)</i>
[审稿人 Reviewer]	《清华大学学报自然科学版 (英文版)》

获奖荣誉 Honors & Awards

[ACM SIGCOMM] Best Student Paper Award (Honorable Mention).	2025
[Huawei] Innovation Pioneer Award (创新先锋).	2023,2024
[Huawei] Gifted Young Award (天才少年计划).	2022
[HKUST] Research Postgraduate Scholarship.	2015-2021
[USTC] Graduate of the Talent Program in CS&EE (计算机与信息科技英才班).	2015
[USTC] Outstanding Student Scholarship (top 15% - 30%).	2012-2014

Last updated in Oct. 2025.