Gaoxiong Zeng

Contact

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Education

Hong Kong University of Science and Technology (HKUST)   **Hong Kong, China**
Ph.D. in Computer Science and Engineering   *2015 - 2022*
Advisor: Prof. Kai Chen.

University of Science and Technology of China (USTC)   **Hefei, China**
B.E. in Electronic Engineering and Information Science   *2011 - 2015*

Work Experiences

[Principal Research Engineer] Huawei Technologies. Shenzhen, China.   *2022.02 - Present*

[Research Intern] Peng Cheng Laboratory. Shenzhen, China.   *2019.09 - 2020.01*

[Research Intern] Chinese Academy of Sciences. Beijing, China.   *2014.07 - 2014.08*

Research Interest

Computer Networks & Systems: Data Center Networking; Transport Protocols; etc.

Publications

Conference & **Workshop Publications**:

○ **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**), Virtual Event, May 2-5, 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**), Virtual Event, November 1-5, 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**), Virtual Event, August 10-14, 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**), Chicago, USA, October 7-10, 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**), Beijing, China, August 17-18, 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**), Hong Kong SAR, China, August 3-4, 2017.

Journal Publications:

○ **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**, 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.
- Wei Bai, Shuihai Hu, **Gaoxiong Zeng**, Kai Chen. "Data Center Flow Scheduling", in Communications of the China Computer Federation (**CCCF**), 15(4), 2019.

Miscellaneous:

- **Gaoxiong Zeng**, Li Chen, Bairen Yi, Kai Chen. "Optimizing Tail Latency in Commodity Datacenters using Forward Error Correction", in arXiv:2110.15157 [cs.NI], October 28, 2021.
- Ge Chen, **Gaoxiong Zeng**, Li Chen. "P4COM: In-Network Computation with Programmable Switches", in arXiv:2107.13694 [cs.NI], July 29, 2021.
- Hao Wang, Jingrong Chen, Xinchen Wan, Han Tian, Jiacheng Xia, **Gaoxiong Zeng**, Weiyan Wang, Kai Chen, Wei Bai, Junchen Jiang. "Domain-specific Communication Optimization for Distributed DNN Training", in arXiv:2008.08445 [cs.DC], August 16, 2020.
- 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**), Santa Clara, USA, March 16-18, 2016.

Selected Talks

[INFOCOM] Cutting Tail Latency in Commodity Datacenters with Cloudburst. Virtual Event.	*2022.05*
[ICNP] FlashPass: Proactive Congestion Control for Shallow-buffered WAN. Virtual Event.	*2021.11*
[ICNP] Congestion Control for Cross-Datacenter Networks. Chicago, USA.	*2019.10*
[APNet] Combining ECN and RTT for Datacenter Transport. Hong Kong, China.	*2017.08*

Professional Services

[Reviewer] IEEE/ACM Transactions on Networking (ToN), IEEE INFOCOM, etc.

[Review Helper] SIGCOMM 2021, NSDI 2021, INFOCOM 2021, CoNEXT 2020, SIGCOMM 2019, etc.

Teaching & Tutoring

[Teaching Assistant] HKUST FYP: Transport Design for Data Center Networks.	*Fall 2019, Spring 2020*
[Teaching Assistant] HKUST COMP2611: Computer Organization.	*Spring 2016, Fall 2016, Spring 2017*

Honors & Awards

[Huawei] Gifted Young Award (天才少年计划).	*2022*
[HKUST] Research Postgraduate Scholarship.	*2015, 2016, 2017, 2018, 2019, 2020, 2021*
[USTC] Graduate of the Talent Program in Computer and Information Science and Technology.	*2015*
[USTC] Outstanding Student Scholarship (top 15% or top 30%).	*2012, 2013, 2014*
[Department of Education, Guangdong] Provincial Soong Ching Ling Scholarship.	*2010*

Last updated in Mar. 2022.