Qizhou Zhang

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EDUCATION

Shanghai Jiao Tong University Sep 2019 - Mar 2022
Electronics and Communication Engineering | Master Shanghai
GPA: 3.50/4.00
Supervisor: Prof Shizhen Zhao

Hangzhou Dianzi University Sep 2015 - Jun 2019
Communication Engineering | Bachelor Hangzhou
GPA: 3.40 / 4.00

RESEARCH INTERESTS

Data center networking, RDMA, SmartNIC accelerated systems, Programmable networks

RESEARCH EXPERIENCE

Research on High-Performance Deadlock-free Data Center Network Design Dec 2020 - Sep 2022

This project aims to combine expander networks and RDMA for building cost-effective high-performance data centers, raising a natural question about deadlocks in traditional expander's routing algorithms

- Focus on resolving deadlocks associated with the deployment of RoCEv2, which relies on PFC to ensure lossless in expander networks
- Propose a topology-routing co-designed methodology called Flattened Clos (FC) to address the issue of cyclic buffer dependency and effectively eliminate PFC-induced deadlocks

Research on Improving FC's Routing Jan 2023 - Jun 2023

- Close performance gap between FC's edge disjoint up-down routing and KSP (K-shortest-path) routing

PUBLICATIONS

- Flattened Clos: Designing High-performance Deadlock-free Expander Data Center Networks Using Graph Contraction. Shizhen Zhao*, Qizhou Zhang*, Peirui Cao, Xiao Zhang, Xinbing Wang, Chenghu Zhou, NSDI 2023 (*co-first author)
- FC+: Near-optimal Deadlock-free Expander Data Center Networks, Xiao Zhang, Peirui Cao and Yongxi Lyu; Qizhou Zhang, Shizhen Zhao, Xinbing Wang, Chenghu Zhou, IEEE ISPA 2023(to appear)

PATENTS

Qizhou Zhang, Shizhen Zhao. 2022. Network construction method and system based on RoCEv2 protocol. CN113965471, filed Oct 22, 2021 and issued Sep 26, 2022.

WORK EXPERIENCE

Huawei Jun 2022 - Jun 2023
Software Development Engineer | Hisilicon Chengdu

As a member of the TCP Offload Engine (TOE) team, which is an integral part of our high-speed network service for commercialized SmartNIC products. My primary role involves optimizing the performance of our service

- Identify and address performance bottlenecks within TOE, encompassing improvements to the congestion control algorithm and fine-tuning of configuration parameters
- Validated optimization functionalities of V200 series chips relevant to the TOE service

Meituan Aug 2021 - Sep 2021
Software Engineer Intern | Machine Learning Platform Beijing

- Investigate the tf-operator and pytorch-operator in Kubeflow community
- Customized development based on pytorch-operator

Alibaba Cloud Aug 2020 - Nov 2020
Software Engineer Intern | Network R&D Hangzhou

- Contribute to the NetSeer project, which is a network performance monitoring system that uses the INT feature of programmable switches to quickly identify link abnormalities such as packet loss and high latency.

- Use the user-mode network library DPDK to write high-performance data acquisition programs, employ Flink for data preprocessing, and utilize JAVA+Spring Boot for visualization development.

TEACHING EXPERIENCE

Teaching Assistant: SJTU CS149: Data Structure, Fall, 2019

Awards

- Second prize of National Post-Graduate Mathematical Contest in Modeling, 2019
- Third prize of China Undergraduate Mathematical Contest, 2019
- Second-class Scholarship in Hangzhou Dianzi University, 2017

Other

Skillset: C++, JAVA, Python, Redis, ibverbs.

Language: English(Proficient), Chinese(Native)