Zhang **Xiao**

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About me

I am a master student in Shanghai Jiao Tong University advised by Prof. **Shizhen Zhao** and also work together with Prof. **Vincent Liu** now. My research interests are mainly in systems and networking.

Education

Shanghai Jiao Tong University — *Shanghai, China*
M.E. in Communication Engineering, GPA: 3.76/4.0 — *Sept. 2021 - Present*

Shanghai Jiao Tong University — *Shanghai, China*
B.E. in Information Engineering, GPA: 3.81/4.3 — *Sept. 2017 - June. 2021*

- Thesis title: Design of Robust and Efficient Edge Server Placement and Server Scheduling Policies

Research Experience

University of Pennsylvania, advised by Prof. Vincent Liu — *Philadelphia, USA*
Visiting Student — *July. 2023 - Present*

- *Beaver*: asynchronous snapshot for services in distributed system.

Shanghai Jiao Tong University, advised by Prof. Shizhen Zhao — *Shanghai, China*
Master Student — *Sep. 2021 - July. 2023*

- *Flattened Clos Plus (FC+)*: Design a deadlock-free routing algorithm without performance loss for RDMA-based expander networks.
- *Flattened Clos (FC)*: Design a deadlock-free routing algorithm for RDMA-based expander networks.
- *Time synchronization with eBPF*: Try to use eBPF and flooding method to achieve time synchronization with high precision for small smart devices.

Shanghai Jiao Tong University, advised by Prof. Shizhen Zhao — *Shanghai, China*
Undergraduate Student — *March. 2020 - Feb. 2021*

- Design of Robust and Efficient Edge Server Placement and Server Scheduling Policies.

Publication & Insubmission

Publication

- Shizhen Zhao*, Qizhou Zhang*, Peirui Cao, **Xiao Zhang**, Xinbing Wang, Chenghu Zhou, "Flattened Clos: Designing High-performance Deadlock-free Expander Data Center Networks Using Graph Contraction" in Boston, MA, USA (2023). NSDI
- Shizhen Zhao*, **Xiao Zhang***, Peirui Cao, Xinbing Wang, "Design of Robust and Efficient Edge Server Placement and Server Scheduling Policies" Virtual Event (2021). IWQOS

Insubmission

- **Xiao Zhang**, Peirui Cao, Yongxi Lyu, Qizhou Zhang, Shizhen Zhao, Xinbing Wang, Chenghu Zhou, "FC+: Near-optimal Deadlock-free Expander Data Center Networks"

Projects

FPGA

- **Earliest Deadline Fist Switch (EDF switch)**: The EDF switch is to transmit packets based on the timestamp of each packet. The packets which have the earliest deadline go first.
- **64-FFT acceleration**: Use FPGA to accelerate the compute of 64-FFT algorithm.

System

- **Beaver's basic testbed**: Implement a small distributed platform with L4 load balancers and managers to deploy beaver snapshot protocol. L4 load balancer is realized by DPDK and SNAT in backends is realized by eBPF.
- **Concurrent Map Reduce System**: Use multiple threads on single hosts to realize a small map reduce system.

- **Concurrent web server**: Simple web server by multiple threads to handle user requests.

Honors & Awards

2021	**awardee,** Outstanding Graduate of Shanghai	*Shanghai, China*
2020	**awardee,** Liu Yongling Scholarship	*Shanghai, China*
2018-20	**awardee,** Category B Academic Scholarship	*Shanghai, China*