

Guo Chen

CONTACT INFORMATION Phone: +86 138-1007-6164 Email: chen-g11@mails.tsinghua.edu.cn
Address: Room 4-104, Building FIT, Tsinghua University, Beijing 10084, China

EDUCATION **Ph.D, Tsinghua University**, Beijing, China 2011.9 - 2016.7 (expected)
Computer Science & Technology
• *Advisor*: Prof. Youjian Zhao
• *Co-advisor*: Prof. Dan Pei

B.S., Wuhan University, Wuhan, China 2007.9 - 2011.7
Communication Engineering
• *Advisor*: Prof. Deshi Li

RESEARCH **Data Center Networking**
• *Fast and Cautious*: leveraging multi-path diversity for transport loss recovery in data centers.
• *Coded Load-balancing*: robust packet-level load-balancing for data center networks through forward error correction (FEC) coding.
• *Explicit Priority Notification*: minimizing flow completion time for data center networks, through flow scheduling with explicit priority notification from the network.
• *F²Tree*: accelerating failure recovery in production data center networks, only through a small amount of link rewiring and switch configuration changes.
• *CQRD*: alleviating flow interference in data center networks through fine-grained switch queue management scheme.

High Performance Switching and Routing
• *100Gbps Core Router*: designing and implementing an 100Gbps core router with fully independent intellectual property. (National High Technology Research and Development Program of China)
• *Designing Buffer Capacity of Crosspoint-Queued (CQ) Switch*: study on CQ buffer size's impact on CQ switch's throughput and delay performance.

Wi-Fi Network
• *WiLy*: a systematic study and optimization of WiFi hop latency in the wild, based on measurement results from a 47-AP real world deployment in Tsinghua University campus.

PUBLICATIONS Conferences

- **Guo Chen**, Youjian Zhao, Dan Pei and Dan Li. "Rewiring 2 Links is Enough: Accelerating Failure Recovery in Production Data Center Networks". IEEE International Conference on Distributed Computing Systems (**ICDCS**) 2015. [acceptance ratio **12.8%**]
- **Guo Chen**, Dan Pei and Youjian Zhao. "CQRD: A Switch-based Approach to Flow Interference in Data Center Networks". IEEE Conference on Local Computer Networks (**LCN**) 2014. [acceptance ratio **29.4%**]
- **Guo Chen**, Dan Pei, Youjian Zhao and Yongqian Sun. "Designing Buffer Capacity of Crosspoint-Queued Switch". IFIP International Conference on Network and Parallel Computing (**NPC**) 2014. [acceptance ratio **<30%**]

Journals

- **Guo Chen**, Dan Pei and Youjian Zhao. "Alleviating Flow Interference in Data Center Networks through Fine-grained Switch Queue Management". Elsevier Computer Networks (**COMNET**). (to appear).

- **Guo Chen**, Dan Pei, Youjian Zhao and Yongqian Sun. “Analyzing the Impact of Buffer Capacity on Crosspoint-Queued Switches Performance”. Journal of Communications and Networks (**JCN**). (accepted).
- Xiaofeng Liu, Youjian Zhao and **Guo Chen**. “A Heuristic Concurrent Dispatching Algorithm For MSM Clos-Network Switches”. Journal of Software. (in Chinese, to appear).

Under Submission

- **Guo Chen**, Yuanwei Lu, Bojie Li, Yuan Meng, Kun Tan, Dan Pei, Peng Cheng, Larry Luo, Yongqiang Xiong, Xiaoliang Wang and Youjian Zhao. “Fast and Cautious: Leveraging Multi-path Diversity for Transport Loss Recovery in Data Centers”. **NSDI** 2016. (submitted).
- Yuanwei Lu, **Guo Chen**, Kun Tan, Larry Luo, Yongqiang Xiong, Xiaoliang Wang, Yongguang Zhang and Enhong Chen. “One More Queue is Enough: Minimizing Flow Completion Time with Explicit Priority Notification”. **NSDI** 2016. (submitted).
- Changhua Pei, Youjian Zhao, **Guo Chen**, Ruming Tang, Yuan Meng, Minghua Ma, Ken Ling and Dan Pei. “WiFi Can Be the Weakest Link of Round Trip Network Latency”. **INFOCOM** 2016. (submitted).

PATENTS

- Youjian Zhao; **Guo Chen**; Chengbin Quan, “Variable-length packet switching fabric” (in Chinese), CN103581054A, 2014.02.12
- Youjian Zhao; **Guo Chen**; Dan Pei, “Scalable multi-path fixed-length packet switching fabric without closed-loop flow control” (in Chinese), CN103595658A, 2014.02.19

TEACHING EXPERIENCE

Advanced Network Management, a graduate course for foreign students in English, offered by Professor Dan Pei 2013 - 2014

- Preparing course materials and lecture notes.
- Setting up and advising students’ course projects.

Digital Logic Circuits Experiments

2011 - 2013

- Preparing experiment projects on FPGA.
- Guiding students’ experiments.

INDUSTRY EXPERIENCE

Microsoft Research Asia

Research Intern. Advised by **Kun Tan**

October 2014 - September 2015

- Designing and implementing robust multipath transport for data center networks.
- Designing and implementing robust load-balancing for data center networks.

Consenwell Electronic Technology Co., Ltd.

Software Engineer Intern

June 2014 - July 2014

- Designing and implementing a mobile enterprise resource planning system.

Beijing Zhongke Fulong Computer Technology Co., Ltd.

Software Engineer Intern

June 2013 - July 2013

- Designing a production management software for factories.

HONORS

- First Class Scholarship for Graduate Student, 2012
- Third Class Scholarship for Graduate Student, 2014
- National Scholarship for Graduate Student, 2015

REFERENCES

Youjian Zhao

Professor, Vice Department Chair

Department of Computer Science & Technology, Tsinghua University

zhaoyoujian@tsinghua.edu.cn

Dan Pei

Associate Professor, China's Global Talents Recruitment (Youth) Program

Department of Computer Science & Technology, Tsinghua University

peidan@tsinghua.edu.cn

Kun Tan

Senior Researcher, Research Manager

Wireless & Networking Group, Microsoft Research Asia

kuntan@microsoft.com

Deshi Li

Professor, Dean

School of Electronic Information, Wuhan University

dsli@whu.edu.cn