Long Gong

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Objective

Internship position in the field of networking (with special interest in software defined networking and data center networking), scheduling in switches, and software engineering. Available: Summer and Fall 2018

Education

Georgia Institute of Technology, Atlanta, GA, USA
Ph.D. Candidate in Computer Science (GPA: 3.91/4.0) 2015.8 - 2020.5 (**Expected**)

University of Science and Technology of China, Hefei, Anhui, China
M.Eng. in Communication and Information Systems (GPA: 3.81/4.3) 2012.9 - 2015.6
B.Eng. in Electronic Information Engineering (GPA: 3.75/4.3) 2008.9 - 2012.6

Intern Experience

Alibaba Group (U.S.) Inc, Bellevue, WA, USA 2018.5 - 2018.8
Intern Mentor: Gang Cheng
Built a highly scalable multi-tenant BGP as an important part of a high-performance and high-availability SDN based hybrid cloud network solution.

AT&T Labs Research, Bedminster, NJ, USA 2016.5 - 2016.7
Research Intern Mentor: He Yan and Zihui Ge
Developed tools to automate the dynamics analysis in services supported by virtualized environment.

Projects

Crossbar Scheduling 2016.2 - Present

• Designed the **first** parallel iterative crossbar scheduling which has constant per-port time complexity and can provably achieve the same performance (both throughput and delay) as the family of maximal matching based schedulers that have at least logarithmic per-port time complexity.

• Designed a crossbar scheduling algorithm, which can exactly emulate the linear-time centralized version (*i.e.,* SERENA) in logarithmic rounds. (IEEE/ACM Transactions on Networking under submission)

• Designed a simple yet effective "add-on" crossbar scheduling algorithm for input-queued switches, which can boost the performance (switch throughput or delay or both) of existing crossbar scheduling algorithms (*e.g.*, iSLIP and SERENA) with almost "no" computational overhead. (SIGMETRICS 2017)

• Built an efficient and flexible input-queued switch simulator in C++.

Time Capsule for Online Social Activities 2015.9 - Present

• Designed a hybrid streaming-sampling algorithm for high accurate measurements of Online Social Networking (OSN) cascade statistics, using limited memory, which decreased the errors (measured in ℓ_2) by more than one order of magnitude. (ICCCN 2017)

Network Virtualization 2012.2 - 2015.6

• Proposed the **first** integer linear programming formulations for the virtual optical network embedding problems in the contexts of flexible-grid elastic optical networks, and designed efficient algorithms which achieved much better performance. (Journal of Lightwave Technology)

• Built the **first** OpenFlow-based network virtualization platform in which the underlying infrastructure is the flexible-grid elastic optical networks. (Master Thesis)

Professional Skills

Programming Languages: C++ (proficient), PYTHON (fluent), JAVA (prior experience)