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: May - Aug 2017

Education

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

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

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 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 switching scheduling algorithms (e.g., iSLIP and SERENA) with almost "no" computational overhead. (SIGMETRICS 2017)

• Built a efficient and flexible simulator for crossbar scheduling in input-queued switches.

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 over Elastic Optical Networks 2012.2 - 2015.6

• Designed a novel virtual network embedding algorithm, which increased the network utilization and decreased the time complexity. (INFOCOM 2014)

• 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)

• Proved the first inapproximability result of the location-constrained virtual network embedding (LC-VNE) problems, and designed efficient algorithms for solving LC-VNE, which achieved much better performance (in terms of both resource consumption and fairness). (IEEE/ACM TRANSACTIONS ON NETWORKING)

• Built the first OpenFlow-based network virtualization platform where the underlying infrastructure is the flexible-grid elastic optical networks.

Selected Publications [Google Scholar]

1. **Long Gong**, Paul Tune, Liang Liu, Sen Yang, and Jun (Jim) Xu. Queue-Proportional Sampling: A Better Approach to Crossbar Scheduling for Input-Queued Switches. **accepted to** Sigmetrics 2017,

2017

2. **Long Gong**, Huihui Jiang, Yixiang Wang, and Zuqing Zhu. Novel Location-Constrained Virtual Network Embedding (LC-VNE) Algorithms Towards Integrated Node and Link Mapping. *IEEE/ACM Transactions on Networking*, 24(6):3648–3661, Dec. 2016
3. **Long Gong** and Zuqing Zhu. Virtual Optical Network Embedding (VONE) Over Elastic Optical Networks. *Journal of Lightwave Technology*, 32(3):450–460, Feb. 2014
4. **Long Gong**, Yonggang Wen, Zuqing Zhu, and T. Lee. Toward Profit-Seeking Virtual Network Embedding Algorithm via Global Resource Capacity. In *IEEE International Conference on Computer Communications (INFOCOM)*, pages 1–9, Apr. 2014
5. Long Gong, Xiang Zhou, Xiahe Liu, Wenwen Zhao, Wei Lu, and Zuqing Zhu. Efficient resource allocation for all-optical multicasting over spectrum-sliced elastic optical networks. *IEEE/OSA Journal of Optical Communications and Networking*, 5(8):836–847, Aug. 2013

Selected Talks

1. Toward Profit-Seeking Virtual Network Embedding Algorithm via Global Resource Capacity, IEEE INFOCOM 2014, Toronto, Canada
2. Revenue-Driven Virtual Network Embedding Based on Global Resource Information, IEEE GLOBECOM 2013, Atlanta, GA, USA
3. Dynamic Transparent Virtual Network Embedding over Elastic Optical Infrastructures, IEEE ICC 2013, Budapest, Hungary

Professional Skills

Programming Languages: C++ (proficient), Python (fluent), Java (prior experience)

Honors and Awards

Excellent Graduate
University of Science and Technology of China, Hefei, Anhui, China 2015

National Scholarship (for Master Students)
University of Science and Technology of China, Hefei, Anhui, China 2013

Best Paper Award
ONS Symposium, IEEE GLOBECOM 2013 2013
ONS Symposium, IEEE ICC 2013 2013

Professional Service

Reviewer: INFOCOM 2016