Long Gong

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Education

Georgia Institute of Technology, Atlanta, GA, USA
    Ph.D. in Computer Science (GPA: 3.92/4.0)   2015.8 - 20120.7

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 Experiences

Facebook Inc, Menlo Park, CA, USA   2019.5 - 2019.8
    Intern   Mentor: Alex Eckert
    Built a user-friendly tool to assist fast yet robust software deployment processes for switches.

Alibaba Group (U.S.) Inc, Bellevue, WA, USA   2018.5 - 2018.8
    Intern   Mentor: Gang Cheng
    Built a highly scalable multi-tenant BGP tool as an important component 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

Set Reconciliation   2019.2 - 2020.7
    • Designed a novel set reconciliation scheme that has both a low computational complexity and a low communication overhead of roughly twice the theoretical minimum. (**submitted to** VLDB 2021)
    • Built an efficient benchmark tool (in C++) for set reconciliation.

Similarity Search   2019.2 - 2020.7
    • Designed a new framework to Approximate Nearest Neighbor Search (ANNS), a solution based on which can have both a low index size and a low query time complexity. (VLDB 2020)
    • Built an efficient benchmark tool (in C++) for ANNS in Hamming and edit distances.

Crossbar Scheduling   2016.2 - 2020.7
    • Designed a series of simple distributed/parallel crossbar scheduling algorithms that are low in time complexities, yet have excellent (throughput and delay) performances. (SIGMETRICS 2017, HPSR 2020, and Valuetools 2020)
    • Built an efficient and flexible simulator (in C/C++) for crossbar scheduling in input-queued switches.

Time Capsule for Online Social Activities   2015.9 - 2017.7
    • 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
    • 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. (Master Thesis)

Professional Skills

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

Professional Service

*Reviewer (**selected**):* IEEE INFOCOM 2016, IEEE Transactions on Parallel and Distributed Systems, IEEE/ACM Transactions on Networking