Jiaqiang Liu

+86-133331132364
liujiaqiang12@mails.tsinghua.edu.cn
Room 10-202, Rohm Building, Tsinghua University, Beijing, China
http://fi.ee.tsinghua.edu.cn/~liujiaqiang/

Education

Dept. of Electronic Engineering , Tsinghua University, Ph.D Candidate 2012/09—Present
Research topic: Software defined and virtualized data center network and mobile network.
Major: Communication and Information System. GPA: 92.5
Supervisor: Prof. Depeng Jin and Prof. Yong Li.

Dept. of Electronic Engineering , Tsinghua University, Bachelor 2010/09—2012/07
Major: Electronics Science and Technology.

Dept. of Science in Mathematics and Physics, Tsinghua University 2008/09—2010/09

Awards

Graduate scholarship of Tsinghua University（2013, 2014, 2015）

Student Travel Grant (SIGCOMM 2014 , ICNP 2013)

Undergraduate scholarship of Tsinghua University (2009, 2010, 2011)

The First prize of National High School Mathematics and Chemistry Olympiad Competitions (2008)

Research Projects

SDN and NFV based Future Mobile Core Network 2015/09—Present
Joint project with Huawei. Designed the mobile core network by separating the control and data plane functions of charging, DPI and caching, and deploying them in cloud environment. Led a team with five graduate students to implement the prototype system based on OpenStack and OpenDaylight.

Analyzing Viewing Video Patterns in Urban Neighbourhoods 2015/11—2016/04
Joint project with researchers in KCL. Measurement study of video viewing patterns in Shanghai. Exploited the LDA model and K-Means to automatically cluster the neighborhoods based on viewing video data, show that the discovered four clusters were corresponding to downtown resident, suburb resident, office and hybrid regions through cross-validation with POI-data.

End-to-end Network Performance Measurement in Cloud 2014/09—2015/06
Joint project with Huawei. Designed a system to measure end-to-end network performance on demand through RestFul APIs, by dealing with the security, virtualization and multi-path forwarding issues. Implemented the design in OpenStack Neutron.

SDN based Virtual Machine Migration 2012/12—2013/09
Joint project with Hitachi. Proposed to exploit SDN to optimize VM migration by routing the migration traffic on paths with most available bandwidth and pre-update the flow tables. Built the prototype system using Floodlight and OpenStack, publish a demo paper at SIGCOMM 2014.

Research on Next Generation Internet Architecture 2011/03—2012/11
The National Basic Research Program of China (973 Program). Surveyed and tested network experiment testbed: ORBIT, and participated in development of our own testbed TUNIE, mainly responsible for developing shell scripts to automatically configure and run network experiments according to the commands from management component.

Internship Experience

Rothwell Electric Co., LTD, Yangzhou, China 2014/07-2014/08
Software Engineer, Driving Recorder Group
Responsible for implementing the underlying interfaces for efficiently storing and querying driving data on a flash chip. Designed a modified circular buffer structure that supported simultaneous read and write operations, and required less memory in page-erase operation. Exploit binary search in implementing querying of records in a time period.

Baina Information. Beijing, China 2012/07-2012/09
Software Engineer, Dolphin Browser group
Worked with Yu Mo. Developed a system to automatically extract melody from MP3 file and then convert it to MIDI file by using DFFT and heuristic search. The accuracy of the system achieved to 70%, very close to the highest accuracy in literature at that time.

Skills

English: CET-6 (533/710). Good at reading and writing. Fluent in listening and speaking.
Programming: Proficient in C/C++, Matlab. Familiar with Java, Python, Linux Script.

Professional Activities

Teaching Assistant: Theories and Experiments of Computer Networks, Undergraduate. 2014-2016

Journal Reviewer: Frontiers of Computer Science (2016), IEEE Communication Magazine (2015), Mobile Networks and Applications (2014,2015).

Conference Reviewer: ICCCN 2015, Globecom 2015.

Publication

1. **Jiaqiang Liu**, Yong Li, Ying Zhang, Li Su, Depeng Jin. Improve Service Chaining Performance with Optimized Middlebox Placement. *In IEEE Transactions on Service Computing, DOI 10.1109/TSC.2015.2502252.*
2. **Jiaqiang Liu**, Yong Li, Huandong Wang, Depeng Jin, Li Su, Lieguang Zeng and Thanos Vasilakos. Leveraging Software-Defined Networking for Security Policy Enforcement. *In Information Science, Vol. 327, 2016, pp: 288–299.*
3. **Jiaqiang Liu**, Yong Li, Depeng Jin and Lieguang Zeng, Traffic-Aware Cross-Site Virtual Machine Migration in Future Mobile Cloud Computing. *In Mobile Networks and Applications, Vol. 20. No. 1, 2015, pp. 62—71.*
4. **Jiaqiang Liu**, Yong Li, Min Chen, Wenxia Dong and Depeng Jin. Software-Defined Internet of Things for Smart Urban Sensing. *In Communication Magazine. Vol. 53, Issue. 9, 2015, pp: 55-63.*
5. Huan Yan, **Jiaqiang Liu**, Yong Li, Wenxia Dong, Chengyong Lin and Depeng Jin. WAN as a Service for Cloud via Software-Defined Network and Open APIs. *In Proc. of INFOCOM 2015.*
6. **Jiaqiang Liu**, Li Su, Yuchen Jin, Yong Li, Depeng Jin and Lieguang Zeng. Optimal VM Migration Planning for Data Centers. *In Proc. of Globecom 2014.*
7. **Jiaqiang Liu**, Yong Li and Depeng Jin, SDN-based Live VM Migration Across Datacenters. *In Proc. of SIGCOMM 2014.*
8. **Jiaqiang Liu**, Depeng Jin, Software Defined Live Virtual Machine Migration. *In Proc. of ICNP 2013.*
9. **Jiaqiang Liu**, Shaoran Xiao, Yong Li, Haoyu Song, Depeng Jin and Li Su, NetWatch: End-to-end Network Performance Measurement as a Service for Cloud. *Submit to IEEE Transactions on Cloud Computing.*
10. **Jiaqiang Liu**, Huan Yan, Yong Li, Li Su and Depeng Jin, Cache Behavior Characterization and Validation over Large-scale Video Data. *Submit to ICCCN 2016.*
11. **Jiaqiang Liu**, Huan Yan, Yong Li, Dmytro Karamshuk, Nishanth Sastry and Depeng Jin. Discovering and Understanding Geographical Video Viewing Patterns in Urban Neighborhoods. *Submit to Multimedia 2016.*
12. Huan Yan, **Jiaqiang Liu**, Yong Li, Depeng Jin and Sheng Chen. Spatial Popularity and Similarity of Watching Videos in a Large City. *Submit to Globecom 2016.*
13. **Jiaqiang Liu**, Yong Li, Yin Shi, Juan Wu and Depeng Jin. "A method and system to measure VM dependencies", Patent. *Application No. 201510100366.0.*