

RESEARCH INTERESTS

I am broadly interested in computer systems, from single machine systems to data centers. Recently, I mainly work on graph computation systems and graph mining. I also work a bit on data mining and machine learning.

EDUCATION

The Chinese University of Hong Kong Aug 2012 - Aug 2016

- Ph.D, Department of Computer Science & Engineering.
- Advised by [Prof. John C.S. Lui](#).

Shanghai Jiao Tong University Sep 2008 - July 2012

- Bachelor of Science, [ACM Class](#), Department of Computer Science & Engineering.

EXPERIENCE

Huawei Noah's Ark Lab, Hong Kong, China Sep 2012 - Oct 2015

- Industry-university collaboration.
- Stream processing: developed SAND which was the prototype of StreamSmart, a stream data mining platform which supports various streaming algorithms in Huawei's product line (e.g., DPI and anomaly detection)
- Graph processing:
 - Developed VENUS, a disk-based graph computation system.
 - Developed CloudWalker and PowerWalk for SimRank and Personalized PageRank computation.
 - VENUS and CloudWalker have been used in Huawei App Store to support large-scale graph-based App recommendation.
- Filed four patents.

Center for Brain-like Computing and Machine Intelligence (BCMI), SJTU Feb 2012 - June 2012

- Developed a sketch-based image search system called [Painting-Finder](#) with [Prof. Liqing Zhang](#).

Tencent PC Manager Team, Tencent July 2011 - Feb 2012

- Research intern on malware analysis.

Center for Brain-like Computing and Machine Intelligence (BCMI), SJTU July 2010 - Jun 2011

- Worked on brain computer interface and EEG data processing with [Prof. Liqing Zhang](#).

PUBLICATIONS

Conference:

- **PowerWalk: Scalable Personalized PageRank via Random Walks with Vertex-Centric Decomposition**
Qin Liu, Zhenguo Li, John C.S. Lui., Jiefeng Cheng
The 25th ACM International Conference on Information and Knowledge Management (CIKM), October 2016

- **Walking in the Cloud: Parallel SimRank at Scale**
Zhenguo Li, Yixiang Fang, **Qin Liu**, Jiefeng Cheng, Reynold Cheng, John C.S. Lui.
Proceedings of the VLDB Endowment (PVLDB), 9(1), 2015
- **VENUS: Vertex-Centric Streamlined Graph Computation on a Single PC**
Jiefeng Cheng, **Qin Liu**, Zhenguo Li, Wei Fan, John C.S. Lui, Cheng He.
The 31st IEEE International Conference on Data Engineering (ICDE), April 2015
- **SAND: A Fault-Tolerant Streaming Architecture for Network Traffic Analytics**
Qin Liu, John C.S. Lui, Cheng He, Lujia Pan, Wei Fan, Yunlong Shi.
The 44th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN), June 2014 (practical experience report)
- **Combining Factorization Model and Additive Forest for Collaborative Follower Recommendation**
Tianqi Chen, Linpeng Tang, **Qin Liu**, Diyi Yang, Saining Xie, Xuezhi Cao, Chunyang Wu, Enpeng Yao, Zhengyang Liu, Zhansheng Jiang, Cheng Chen, Weihao Kong, Yong Yu.
KDD-Cup Workshop, August 2012 (1st place in track 1)

Journal:

- **VENUS: A System for Streamlined Graph Computation on a Single PC**
Qin Liu, Jiefeng Cheng, Zhenguo Li, John C.S. Lui.
IEEE Transactions on Knowledge and Data Engineering (TKDE), Nov 2015
(An earlier version appeared in ICDE 2015)
- **SAND: A fault-tolerant streaming architecture for network traffic analytics**
Qin Liu, John C.S. Lui, Cheng He, Lujia Pan, Wei Fan, Yunlong Shi.
Journal of Systems and Software (JSS), Aug 2015
(An earlier version appeared in DSN 2014)

AWARDS & HONORS **1st place** in KDD Cup 2012, Track 1 (Coleader of Team ACMClass@SJTU) 2012
Academic Excellence Scholarship (2nd-prize), SJTU 2011
Silver Medal (38th place) in *National Olympiad in Informatics (NOI)*, China 2007

TEACHING At CUHK:
EXPERIENCE Teaching Assistant of *Introduction to Operating Systems* Fall 2014/2012
Teaching Assistant of *Data Communication and Computer Networks* Spring 2014/2013
Teaching Assistant of *Principles of System Software* Fall 2013

At SJTU:
Teaching Assistant of *Machine Learning and Data Mining in Practice* Spring 2012
Teaching Assistant of *Project Workshop of Operating System* Fall 2011
Teaching Assistant of *Project Workshop of Compiler Principles* Spring 2011
Teaching Fellow of *Programming* Fall 2010
Teaching Assistant of *Practice for Programming and Coding Ability* Fall 2010
Teaching Assistant of *Data Structure* Spring 2010
Teaching Assistant of *Programming* Fall 2009

SKILLS **Programming Languages:** C/C++, Python, Java
Parallel Programming: OpenMP, MPI, ZeroMQ
Data Processing Systems: Spark, GraphLab PowerGraph, GraphChi, Storm, Hadoop