

### 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 - Present

- Ph.D Candidate, 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

Sep 2012 - Oct 2015

Huawei Noah's Ark Lab, Hong Kong, China

- 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.

Feb 2012 - June 2012

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

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

July 2011 - Feb 2012

Tencent PC Manager Team, Tencent

- Research intern on malware analysis.

July 2010 - Jun 2011

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

- 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	<b>1st place</b> in KDD Cup 2012, Track 1 (Coleader of Team ACMClass@SJTU)	2012
	Academic Excellence Scholarship (2nd-prize), SJTU	2011
	<b>Silver Medal</b> (38th place) in <i>National Olympiad in Informatics (NOI)</i> , China	2007

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

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

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