Siqiang Luo

Room 417, Chow Yei Ching Building, HKU
Pokfulam Road, Hong Kong
✉ sqluo@connect.hku.hk

▬▬ Education

Ph.D.	**The University of Hong Kong** (HKU)
2015.07 - 2019.05	Department of Computer Science, HKU
	Recipient of Hong Kong PhD Fellowship (HKPFS)
Advisor (Primary)	Prof. Ben Kao
Thesis	Adaptive Optimization Techniques in Graph-based Applications
M.S.	**Fudan University** (FDU), China
2010.09 - 2013.06	School of Computer Science, FDU
Advisor	Prof. Shuigeng Zhou.
Thesis	Distributed Systems for Keyword Search on Road Networks
B.S.	**Fudan University** (FDU), China
2006.09 - 2010.06	School of Computer Science, FDU
	Major GPA: 3.82/4.0

▬▬ Research Interest

I am broadly interested in data management systems, in the aspects of adaptive optimization techniques, distributed computation and efficient graph indexes.

▬▬ Publications

Adaptive Optimization Techniques

[1] **Siqiang Luo**, Ben Kao, Xiaowei Wu, Reynold Cheng, *"MPR – A Partitioning-Replication Framework for Parallel-Processing kNN Search on Road Networks"*, **ICDE** 2019.

[2] **Siqiang Luo**, Xiaokui Xiao, Wenqing Lin, Ben Kao, *"Baton: Batch One-Hop Personalized PageRanks with Efficiency and Effectiveness"*, **TKDE** 2019.

[3] **Siqiang Luo**, Xiaokui Xiao, Wenqing Lin, Ben Kao, *"Efficient Batch One-Hop Personalized PageRanks"*, research short paper, **ICDE** 2019.

[4] **Siqiang Luo**, Ben Kao, Guoliang Li, etc., *"TOAIN: A Throughput Optimizing Adaptive Index for Answering Dynamic kNN Queries on Road Networks"*, **VLDB** 2018.

Distributed Systems

[5] **Siqiang Luo**, *"Distributed PageRank Computation: An Improved Theoretical Study"*, **AAAI** 2019 **(spotlight paper)**.

[6] **Siqiang Luo**, Yifeng Luo, Shuigeng Zhou, etc., *"Distributed Spatial Keyword Querying on Road Networks"*, **EDBT** 2014.

[7] **Siqiang Luo**, Yifeng Luo, Shuigeng Zhou, etc., *"DISKs: A System for Distributed Spatial Group Keyword Search on Road Networks"*, demo track, **VLDB** 2012

[8] Yifeng Luo, **Siqiang Luo**, Jihong Guan, Shuigeng Zhou, *"A RAMCloud Storage System based on HDFS: Architecture, Implementation and Evaluation"*, **Journal of Systems and Software**, 2013.

Graph Indexes

[9] **Siqiang Luo**, Reynold Cheng, Ben Kao, Xiaokui Xiao, Shuigeng Zhou, Jiafeng Hu. *"ROAM: A Fundamental Routing Query on Road Networks with Efficiency"*, **TKDE** 2019.

[10] **Siqiang Luo**, Jiafeng Hu, Reynold Cheng, etc., *"SEQ: Example-based Query for Spatial Objects"*, research short paper, **CIKM** 2017

[11] Yixiang Fang, Zheng Wang, Reynold Cheng, Xiaodong Li, **Siqiang Luo**, Jiafeng Hu, Xiaojun Chen, *"On Spatial-Aware Community Search"*, **TKDE** 2018.

[12] Jiafeng Hu, Xiaowei Wu, Reynold Cheng, **Siqiang Luo**, Yixiang Fang, *"On Minimal Steiner Maximum-Connected Subgraph Queries"*, **TKDE** 2017.

[13] Yixiang Fang, Reynold Cheng, **Siqiang Luo**, Jiafeng Hu, and Kai Huang, *"C-Explorer: Browsing Communities in Large Graphs"*, demo track, **VLDB** 2017

[14] Yixiang Fang, Reynold Cheng, Yankai Chen, **Siqiang Luo**, Jiafeng Hu, *"Effective and Efficient Attributed Community Search"*, **VLDB Journal** 2017.

[15] Yixiang Fang, Reynold Cheng, Xiaodong Li, **Siqiang Luo**, Jiafeng Hu, *"Effective Community Search over Large Spatial Graphs"*, **VLDB** 2017.

[16] Yixiang Fang, Reynold Cheng, **Siqiang Luo**, Jiafeng Hu, *"Effective Community Search for Large Attributed Graphs"*, **VLDB** 2016.

[17] Jiafeng Hu, Xiaowei Wu, Reynold Cheng, **Siqiang Luo** and Yixiang Fang, *"Querying Minimal Steiner Maximum-Connected Subgraphs in Large Graphs"*, **CIKM** 2016.

[18] Diwen Zhu, Hui Ma, Xiaokui Xiao, **Siqiang Luo**, Youze Tang, Shuigeng Zhou, *"Shortest Path and Distance Queries on Road Networks: Towards Bridging Theory and Practice"*, **SIGMOD** 2013.

MISC

[19] **Siqiang Luo**, Junping Zhang, *"Multi-Operator Image Retargeting with Automatic Integration of Direct and Indirect Seam Carving"*, **Image and Vision Computing**, 2012.

[20] Xiang Li, Ben Kao, **Siqiang Luo**, Martin Ester, *"ROSC: Robust Spectral Clustering on Multi-scale Data"*, **WWW** 2018.

[21] Jiafeng Hu, Reynold Cheng, Zhipeng Huang, Yixiang Fang, **Siqiang Luo**, *"On Embedding Uncertain Graphs"*, **CIKM** 2017.

In Submission

[1] **Siqiang Luo**, Xiaowei Wu, Ben Kao, *"Radar-Push: A Distributed Algorithm to Compute PageRank and its Theoretical Analysis"*, Submitted to **Artificial Intelligence** Journal.

Patents

CN101609547B **Siqiang Luo**, Junping Zhang, *"Seamless Image Processing based on Accumulative Energy"*

Research Internships

Jan. 2019 - Apr. 2019	Visiting Researcher
	AI Theory Group, University of Cambridge, UK
Project	Distributed Algorithms for PageRank Computation.
Advisor	Prof. Thomas Sauerwald
Jun. 2017 - Sep. 2017	Research Assistant
	Database Group, Nanyang Technological University, Singapore
Project	Parallel Algorithms for Personalized PageRanks for Billion-edge Social Networks.
Advisor	Prof. Xiaokui Xiao
Jul. 2016 - Aug. 2016	Research Assistant
	Database Group, Tsinghua University, China

	Project Automatic Index Confiugrations for Optimizing Location-based Systems.
	Advisor Prof. Guoliang Li
Sep. 2011 - Jun. 2012	Research Assistant
	Database Group, Nanyang Technological University, Singapore
	Project Efficient Shortest Path Queries with Theoretical Guarantees.
	Advisor Prof. Xiaokui Xiao
Jun. 2009 - Sep. 2010	Research Assistant
	Database Group, Shanghai Key Lab of Intelligent Information Processing, China
	Project Distributed Keyword Search on Graph Data with Hadoop.
	Advisor Prof. Shuigeng Zhou
Jan. 2008 - Jun. 2009	Research Assistant
	Machine Learning Group, Shanghai Key Lab of Intelligent Information Processing, China
	Project Content-aware Image Resizing.
	Advisor Prof. Junping Zhang

Industrial Experience

Aug. 2013 - May. 2015	**Full-Stack Research&Developer Engineer**
	Company Works Applications Co., Ltd.
Jul. 2012 - Sep. 2012	**Software Development Engineer Intern**
	Company Microsoft
Jul. 2009 - Sep. 2009	**Data Engineer Intern**
	Company Shanda Games Limited

Selected Awards

Sep. 2017	Pilot Scheme Scholarship, The University of Hong Kong
Dec. 2015	Hong Kong PhD Fellowship (a prestigious award for excellent fresh PhDs)
Jul. 2013	Outstanding Graduates of Shanghai (top 5%)
Oct. 2012	Intel Fellowship (5 out of 3,000 students)
Nov. 2012	National Scholarship (top scholarship in China)
Nov. 2012	Tung OOCL Award (5 out of 600 students)
May. 2010	1st Prize scholarship for fresh graduate student
May. 2010	Wang-Dao Scholar (top 1% of Fudan students)
May. 2008	National Scholarship for Encouragement
Oct. 2005	1st Prize of National Mathematical Olympiad in Senior
Oct. 2004	1st Prize of National Mathematical Olympiad in Senior

Professional Activities

Invited Reviewers	TKDE, Geoinformatica, IEEE Access, IEEE Transactions on Big Data
External Reviewers	SIGMOD 16~18, VLDB 16~18, ICDE 16~18, KDD 17~ 18, etc.
Teaching Assistant	CCST 9047 (The Age of Big Data.), The University of Hong Kong, 2017
Teaching Assistant	CCST 9047 (The Age of Big Data.), The University of Hong Kong, 2016
Teaching Assistant	COMP 2396 (Object-oriented Programming.), The University of Hong Kong, 2015
Teaching Assistant	C Programming, Fudan University, 2011
Summer Schools	VLDB 2010, VLDB 2011

Invited Talks

Mar. 2019	Emmanuel College, University of Cambridge, UK

Title	Distributed PageRank Computation with Improved Complexities
Jan. 2019	University of Cambridge, UK
Title	Adaptive Approaches for Performance Optimization in Graph-based Applications
July. 2018	Summer Intern Day @ University of Hong Kong, HK
Title	Throughput Optimization Indexing for kNN Systems

Skills

Programing	C/C++, JAVA, Hadoop, Giraph, Spring MVC, Git, Latex, Javascript, HTML, CSS