

Sai Wu

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Research Interests

Distributed database systems, Peer-to-Peer systems, Distributed query processing and optimization, Cloud computing

Education

Ph.D. Computer Science, National University of Singapore, 2010 (Expected)

M.A. School of Electronics Engineering and Computer Science, Peking University, 2005

B.S. Computer Science, Peking University, 2002

Teaching Experience

Teaching Assistant, Algorithm and Data Structure, Peking University, Autumn 2003

Employment

National University of Singapore Singapore
Research Assistant March 2010 to March 2011
Research on epiC, a Cloud system trying to provide database service in the pay-as-you-go model.
Supervisor: Ooi Beng Chin.

National University of Singapore Singapore
Research Assistant October 2007 to March 2010
Research on BestPeer, a P2P solution for the corporate networks. Supervisor: Ooi Beng Chin.

IBM TJ-Watson Research Center Hawthorne, NY
Research Intern June 2009 to September 2009
Research on CAPSULE, a parallel processing module of SPADE system. Manager: Kun-Lung Wu

Baidu Co. Beijing, China
Research Intern November 2004 to March 2005
Research and programming on spam detection for the search engine

Project Experience

epiC system (<http://www.comp.nus.edu.sg/epic>) National University of Singapore
The epiC (elastic power-aware data intensive Cloud) system is designed to provide scalable database services. The system composes of two parts, a processing engine and an underlying storage system. In this system, we try to support both OLAP and OLTP workload.

BestPeer system (<http://www.bestpeer.com>) National University of Singapore
The BestPeer system is a Peer-to-Peer Based platform designed for Corporate Network applications in which a group of organizations controlled by different administrative domains collaborate with each other in order to cut operation cost and improve productivity.

P2P Video-on-Demand System National University of Singapore

We design a Video-on-Demand System for the MediaCorp (www.mediacorp.sg). Videos are segmented and shared between different peers to reduce the workload of the centralized servers. Users can retrieve the video stream from multiple peers to have a stable bitrate for playing.

WebGIS System

Peking University

(<http://rbd.calis.edu.cn/index.jsp>)

We design a WebGIS system for the library of Peking University, where users can search the ancient books in the historical maps.

Publications

1. Yu Cao, Chun Chen, Fei Guo, Dawei Jiang, Yuting Lin, Beng Chin Ooi, Hoang Tam Vo, Sai Wu, Quanqing Xu: *A Cloud Data Storage System for Supporting Both OLTP and OLAP*. 27th IEEE International Conference on Data Engineering (ICDE) 2011.
2. Chun Chen, Gang Chen, Dawei Jiang, Beng Chin Ooi, Hoang Tam Vo, Sai Wu, Quanqing Xu: *Providing Scalable Database Services on the Cloud*. WISE 2010 (keynote)
3. Dawei Jiang, Beng Chin Ooi, Lei Shi, Sai Wu: *The Performance of MapReduce: An In-depth Study*. Int'l Conference on Very Large Data Bases (VLDB), 2010.
4. Sai Wu, Dawei Jiang, Beng Chin Ooi, Kun Lun Wu: *Efficient B+-tree Based Indexing for Cloud Data Processing*. Int'l Conference on Very Large Data Bases (VLDB), 2010.
5. Dalie Sun, Sai Wu, Shouxu Jiang, Jianzhong Li: *Approximate Aggregations in Structured P2P Networks*. To appear on IEEE Transactions on Knowledge and Data Engineering (TKDE), 2010.
6. Jinbao Wang, Sai Wu, Hong Gao, Jianzhong Li, Beng Chin Ooi: *Indexing Multi-dimensional Data in a Cloud System*. ACM Int'l. Conference on Management of Data (SIGMOD), 2010.
7. Sai Wu, Beng Chin Ooi, Kian-Lee Tan: *Continuous Sampling for Online Aggregation Over Multiple Queries*. ACM Int'l. Conference on Management of Data (SIGMOD), 2010.
8. Sai Wu, Shouxu Jiang, Beng Chin Ooi, Kian-Lee Tan: *Distributed Online Aggregation*. PVLDB 2(1): 443-454 (2009)
9. Sai Wu, Quang Hieu Vu, Jianzhong Li, Kian-Lee Tan: *Adaptive Multi-join Query Processing in PDBMS*. ICDE 2009: 1239-1242
10. Sai Wu, Kun-Lung Wu: *An Indexing Framework for Efficient Retrieval on the Cloud*. IEEE Data Eng. Bull. 32(1): 75-82 (2009)
11. Quang Hieu Vu, Mihai Lupu, Sai Wu: *SiMPSON: Efficient Similarity Search in Metric Spaces over P2P Structured Overlay Networks*. Euro-Par 2009: 498-510
12. Sai Wu, Beng Chin Ooi, Jianzhong Li, Kian-Lee Tan: *Just-In-Time Query Retrieval Over Partially Indexed Data on Structured P2P Overlays*. In SIGMOD, 2008.
13. Dalie Sun, Sai Wu, Jianzhong Li, Anthony K. H. Tung: *Skyline-join in distributed databases*. In ICDE Workshops, pp. 176C181, 2008.
14. Sai Wu, Hong Gao, Bei Yu. *Supporting High Dimensional Range Queries in Peer-to-Peer Systems*. In DBISP2P, 2007.

Awards and Honors

Dean's award, School of Computing, National University of Singapore, 2009

Research Achievement Award, School of Computing, National University of Singapore, 2008-2009

Mingde Award, Computer Science, Peking University, 1998-2002

Best Graduate Student Award, Xiyang Daobei High School, 1998