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Keren Zhou

Research Interests

- Multi-core Algorithms.
- Distributed Systems

Education

2014-2017 (expected) **M.S. in Institute of Computing Technology, Chinese Academy of Sciences**
Adviser: Guangming Tan (`http://www.ncic.ac.cn/~tgm`)
GPA: 90/100

2010-2014 **B.E. in School of Software, Yunnan University**
Adviser: Wei Zhou
Thesis: A Practical Concurrent Quadtree
GPA: 92/100

Research Experience

2015.6-present Research Assistant, Institute of Computing Technology, Chinese Academy of Sciences

Deep Learning for Biological Images
- Develop a deep learning framework for biological applications (e.g., membranes detection, cell movement trace). Participate in the ISBI challenge, ranking 24.
- Improve the performance of parallel neural networks on modern architectures by vectorization and blocking techniques. Currently our framework is 8 times faster than Caffe while running Alexnet, MNIST, and Cifar models on a 16-core machine.

2013.1-2014.7 Research Assistant, Intelligent Web Laboratory, Yunnan University

Concurrent Data Structures
- Revisit basic concurrent data structures like linked-lists and binary search trees, prove their correctness, and evaluate their performance.
- Develop the first lock-free KD-Tree and Quadtree, which scale with the increment of threads and achieves tremendous speedup comparing with traditional fine grain lock versions.

Industry Experience

2013.10-2014.2 Research and Develop Intern, Baidu

- Optimize Hadoop work-flows that extract thousands of features from the raw text files, and load them into data warehouses.
- Reference: Jing Li, lijing16@baidu.com

Publications

[1] Zhou, Wei ; **Keren, Zhou** ; Ruan, Zhongzhi ; Yao, Shaowen ; Qian, Depei: A Survey on Modern Multi-core Based Concurrent Data Structure. In: *Journal of Software* (2016)

[2] Zilong, Tan ; **Keren, Zhou** ; Hao, Zhang ; Wei, Zhou: BF-MapReduce: A bloom filter Based Efficient Lightweight Search. In: *International Conference on Collaboration and Internet Computing (CIC) on* IEEE, 2015

[3] Qiang, Li ; Maojie, Gu ; **Keren, Zhou** ; Xiaoming, Sun: Mining User Features for Purchase Prediction in M-Commerce. In: *Data Mining Workshop (ICDMW), 2015 IEEE International Conference on* IEEE, 2015

[4] Zhou, Wei ; Lu, Jin ; **Keren, Zhou** ; Wang, Shipu ; Yao, Shaowen: Concurrent Skiplist Based Double-Layer Index Framework for Cloud Data Processing. In: *Journal of Computer Research and Development* 52 (2015), Nr. 7, S. 1531–1545

[5] **Keren, Zhou** ; Yu, Qian ; Zhu, Zhenwei ; Liu, Wenjia: Dynamic Vegas: A Competitive Congestion Control Strategy. In: *Proceedings of International Conference on Computer Science and Information Technology* Springer, 2014, S. 333–340

Awards and Honors

2016	Merit Students of Chinese Academy of Sciences
2016	Schlumberger Scholarship
2015	Top 10, Alibaba 1st Middleware Engineering Contest
2014	Bronze Medal, The 2014 ACM-ICPC Asia Anshan Regional Contest
2014	Best B.E. Degree Thesis of Yunnan University
2013	Best Creative Award, Baidu Future Search Engine Contest
2013	Meritorious Winner, Mathematical Contest in Modeling
2011	Second Prize, China Undergraduate Mathematical Contest in Modeling
2011,2012	National Scholarship
2011,2012	Merit Students of Yunnan Province

Skills

Languages: C, C++, Java, Python, Bash, Javascript
Parallelism: Pthread, Openmp, MPI, CUDA, SIMD

Language

English   GRE 325, TOEFL 107