Keren Zhou

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EDUCATION

09/2017-07/2023 **Department of Computer Science, Rice University** **Houston, United States**
Expected Degree: *Ph.D. in Computer Science* **Advisor:** John Mellor-Crummey

09/2014-07/2017 **Institute of Computing Technology, Chinese Academy of Sciences** **Beijing, China**
Degree: *M.S. in Computer Architecture* **Advisor:** Guangming Tan

09/2010-07/2014 **School of Software, Yunnan University** **Kunming, China**
Degree: *B.E. in Network Engineering* **Advisor:** Wei Zhou

RESEARCH EXPERIENCE

09/2017-NOW **Rice University** **Houston, United States**
GPU Performance Analysis Tool
- Extended HPCToolkit to support OpenMP and CUDA GPU programming models in a large-scale heterogeneous environment;
- Built a profile view of GPU programs and attributed runtime samples to the corresponding calling context.

06/2015-07/2017 **Nvidia-Sugon-ICT Deep Learning Joint Laboratory** **Beijing, China**
Deep Learning Accelerating Package
- Built a performance analysis model to estimate GPU kernels' performance bottlenecks;
- Devised fine-grained vectorization and blocking on GPUs and CPUs to accelerate CNNs.

INDUSTRY EXPERIENCE

06/2018-08/2018 **Facebook Inc.** **Menlo Park, United States**
- Accelerated neural networks on ARM CPUs using auto-tuning methods;
- Reference: Research Scientist Hao Lu, hlu@fb.com.

04/2017-07/2017 **Nvidia Inc.** **Beijing, China**
- Developed quantization tools on emerging GPUs to utilize INT8 capabilities;
- Reference: Technical Manager Julien Lai, julienlai@nvidia.com.

10/2013-02/2014 **Baidu Inc.** **Beijing, China**
- Optimized Hadoop workflow with its performance improved by 30%;
- Reference: Senior Engineer Jing Li, lijing16@baidu.com.

SELECTED PUBLICATIONS

[1] **Keren, Zhou**; Guangming, Tan; Wei, Zhou: Quadboost: A Scalable Concurrent Quadtree. In: *IEEE Transactions on Parallel and Distributed Systems* (TPDS), 2018

[2] **Keren Zhou**; Guangming Tan; Xiuxia Zhang; Chaowei Wang; Ninghui Sun: A Performance Analysis Framework for Exploiting GPU Microarchitectural Capability. In *26th ACM International Conference on Supercomputing* (ICS), 2017

[3] Xiuxia, Zhang; Guangming, Tan; Shuangbai, Xue; Jiajia, Li; **Keren, Zhou**; Mingyu, Chen: Understanding GPU Microarchitecture to Achieve Bare-Metal Performance Tuning. In: *22nd ACM SIGPLAN Symposium on Principles and Practice of Parallel Programming* (PPOPP), 2017

AWARDS & HONORS

2017 Ken Kennedy Institute Andrew Ladd Fellowship

2017 Ken Kennedy Institute CS&E Fellowship

2011&2012&2016 National Scholarship

2016 Schlumberger Scholarship

2016 Merit Student of Chinese Academy of Sciences

2014 Outstanding B.E. Degree Thesis of Yunnan University

2013 Meritorious Winner, Mathematical Contest in Modeling

2011&2012 Merit Student of Yunnan Province