Keren Zhou

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EDUCATION

09/2017-07/2022 **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**
A Performance Analysis Tool for GPU-accelerated Supercomputers
- Built a runtime system to collect GPU activities in a large-scale heterogeneous environment and attributed them back to the corresponding CPU calling context;
- Developed a profile view for GPU program executions to facilitate hotspot identification, instruction mix analysis, and roof-line model.

06/2015-07/2017 **Institute of Computing Technology, Chinese Academy of Sciences** **Beijing, China**
Deep Learning Accelerating Packages
- 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 and improved its performance by 30%;
- Reference: Senior Engineer Jing Li, lijing16@baidu.com.

SELECTED PUBLICATIONS

[1] **Keren, Zhou**; Mark, Krentel; John, Mellor-Crummey: Tools for top-down performance analysis of GPU-accelerated applications. In: *34th ACM International Conference on Supercomputing* (ICS), 2020

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

[3] **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

AWARDS & HONORS

2019 Second Place, ACM CGO Student Research Competition
2017 Ken Kennedy Institute Andrew Ladd Fellowship
2017 Ken Kennedy Institute CS&E Fellowship
2011&2012&2016 National Scholarship
2016 Schlumberger Scholarship
2014 Outstanding B.E. Degree Thesis of Yunnan University
2013 Meritorious Winner, Mathematical Contest in Modeling
2011&2012 Merit Student of Yunnan Province