

# Keren Zhou

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## EDUCATION

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- 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

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- 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

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- 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

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- [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

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- 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