Baoquan Zhang

Summer Internship 2018
℘ (612) 212 9868
✉ zhan4281@umn.edu

Education

2015 – 2020   **Ph.D. Candidate of Computer Science**, *University of Minnesota*, Twin Cities, U.S., Advisor: Prof. David H.C. Du.
- Persistent Memory Systems, Key-Value Stores, RAID Systems, etc.

2008 – 2015   **B.E. and M.S. of Computer Science**, *Harbin Engineering University (HEU)*, China, Co-Advisor: Prof. Jingmei Li (HEU), Prof. Dongsheng Wang (Tsinghua University).
- Distributed Data Management Systems: HDFS, Hive, Impala and etc.

Selected Research Projects

Nov. 2017 –   **NV-LSM: Log-Structured Merging on Hybrid Volatile/Non-Volatile Memory Systems**, *FAST'18 WiP, 1st Author*.
- Propose the lazy-compaction including two steps – linking and merging.
- Preliminary evaluations show that we reduce 60% of data reads/writes during the compaction.

Dec. 2015 –   **SmartRAID: a RAID-5 on Shingled Magnetic Recording (SMR) Drives**, *Sponsored by Seagate, Short Paper submitted to ATC'18, Full Paper under revision, 1st Author, HotStorage'16, Transactions on Computers (Nov. 2017), 4th Author*.
- Characterize the performance of SMR drives and design a RAID-5 using alternating cleaning policy.
- Evaluations show that SmartRAID reduces over 99% of data cleaning overheads in SMR drives.

2015 – 2016   **Improving Data Integrity in Linux Software RAID using Protection Information**, *Sopnsored by Cray, CCGrid'18 Workshop, 1st Author*.
- Implement a new software RAID module in Linux kernel compatible with T10 Protection Information.
- Evaluation shows that new module detects data corruptions with 10% – 30% of performance overheads.

2013 – 2014   **Shared I/O Scheduling in Cloud for Structured Data Processing**, *BDCloud'14, 1st Author, Chinese Patent: ZL201410081163.7*.
- Balance loads based on the node performance and merge queries to same data sets in a cluster.
- Evaluations show that we improve the system performance by over 30%.

Working Experience

Summer 2017   **Dell EMC**, *Eden Prairie, Minnesota*,
Software Engineering Intern, Manager: Jim Rohde,
Project: Performance improvements of the IO tracing module in storage controllers (C++).
- Conduct comprehensive evaluations on existing tracing module and identify the performance bottleneck.
- Implement a parallel tracing module and improve performance by 50% – 400%.

2013 – 2014   **Research Institute of Information Technology, Tsinghua University**, *Beijing, China*,
Full-Time Research Assistant, Advisor: Prof. Dongsheng Wang,
Project: Construction of geo-distributed data management systems (C++, Python, Java).
- Construct a data management system using MySQL and Impala on HDFS.
- Realize data selecting and joining in the system deployed in Beijing and Suzhou.

Miscellaneous

2015-2016	**ADC Graduate Fellowship**	*University of Minnesota – Twin Cities*
2013-2014	**National Fellowship of China (Rank 1/120)**	*Harbin Engineering University*
2012-2015	**1st-Class Fellowship for Outstanding Students (3-Year)**	*Harbin Engineering University*