

# YUANYUAN SUN

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## RESEARCH INTERESTS

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Cloud storage systems  
Semantic hashing  
Metadata management  
Index structures  
Big data analytics

## EMPLOYMENT

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Alibaba DAMO Academy June, 2019

## EDUCATION

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**Huazhong University of Science and Technology (HUST)**, Wuhan, China 2014.09 – 2019.06  
*Ph.D* in Computer Science and Technology (Advisor: Yu Hua)

**Huazhong University of Science and Technology (HUST)**, Wuhan, China 2010.09 – 2014.06  
*B.E.* in Computer science and technology

## PUBLICATIONS

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### Conferences:

1. **Yuanyuan Sun**, Yu Hua, Zhangyu Chen and Yuncheng Guo, “Mitigating Asymmetric Read and Write Costs in Cuckoo Hashing for Storage Systems”, in Proceedings of USENIX Annual Technical Conference (**USENIX ATC**), 2019.
2. Xinxin Liu, Yu Hua, Xue Liu, Ling Yang and **Yuanyuan Sun**, “Smoother: A Smooth Renewable Power-Aware Middleware”, in Proceedings of the 39th IEEE International Conference on Distributed Computing Systems (**ICDCS**), 2019.
3. Pengfei Zuo, Yu Hua, Cong Wang, Wen Xia, Shunde Cao, Yukun Zhou and **Yuanyuan Sun**, “Mitigating Traffic-based Side Channel Attacks in Bandwidth-efficient Cloud Storage”, in Proceedings of the 32nd IEEE International Parallel and Distributed Processing Symposium (**IPDPS**), 2018.
4. **Yuanyuan Sun**, Yu Hua, Xue Liu, Shunde Cao and Pengfei Zuo, “DLSH: A Distribution-aware LSH Scheme for Approximate Nearest Neighbor Query in Cloud Computing”, in Proceedings of ACM Symposium on Cloud Computing (**SoCC**), 2017.
5. **Yuanyuan Sun**, Yu Hua, Song Jiang, Qiuyu Li, Shunde Cao and Pengfei Zuo, “SmartCuckoo: A Fast and Cost-Efficient Hashing Index Scheme for Cloud Storage Systems”, in Proceedings of USENIX Annual Technical Conference (**USENIX ATC**), 2017.
6. Pengfei Zuo, Yu Hua, Xue Liu, Dan Feng, Wen Xia, Shunde Cao, Jie Wu, **Yuanyuan Sun** and Yuncheng Guo, “BEES: Bandwidth- and Energy- Efficient Image Sharing for Real-time Situation Awareness”, in Proceedings of the 37th International Conference on Distributed Computing Systems (**ICDCS**), 2017.
7. Jie Wu, Yu Hua, Pengfei Zuo and **Yuanyuan Sun**, “A Cost-efficient Rewriting Scheme to Improve Restore Performance in Deduplication Systems”, in Proceedings of the 33rd International Conference on Massive Storage Systems and Technology (**MSST**), 2017.
8. **Yuanyuan Sun**, Yu Hua, Dan Feng, Ling Yang, Pengfei Zuo and Shunde Cao, “MinCounter: An Efficient Cuckoo Hashing Scheme for Cloud Storage Systems”, in Proceedings of the 31st International Conference on Massive Storage Systems and Technology (**MSST**), 2015.
9. Jinjun Liu, Dan Feng, Yu Hua, Bin Peng, Pengfei Zuo, **Yuanyuan Sun**, “P-index: An Efficient Searchable Metadata Indexing Scheme Based on Data Provenance in Cold Storage”, in Proceedings of the 15th International Conference on Algorithms and Architectures for Parallel Processing (**ICA3PP**), 2015.

10. Qiuyu Li, Yu Hua, Wenbo He, Dan Feng, Zhenhua Nie and **Yuanyuan Sun**, “Necklace: An Efficient Cuckoo Hashing Scheme for Cloud Storage Services”, in Proceedings of IEEE/ACM International Symposium on Quality of Service (**IWQoS**), 2014.

### Journals:

1. Pengfei Zuo, Yu Hua, **Yuanyuan Sun**, Xue Liu, Jie Wu, Yuncheng Guo, Wen Xia, Shunde Cao and Dan Feng, “Bandwidth and Energy Efficient Image Sharing for Situation Awareness in Disasters”, IEEE Transactions on Parallel and Distributed Systems (**TPDS**), Vol.30, No.1, 2019, pages: 15-28.
2. Jie Wu, Yu Hua, Pengfei Zuo and **Yuanyuan Sun**, “Improving Restore Performance in Deduplication Systems via a Cost-efficient Rewriting Scheme”, IEEE Transactions on Parallel and Distributed Systems (**TPDS**), Vol.30, No.1, 2019, pages: 119-132.
3. **Yuanyuan Sun**, Yu Hua, Dan Feng, Ling Yang, Pengfei Zuo, Shunde Cao and Yuncheng Guo, “A Collision-Mitigation Cuckoo Hashing Scheme for Large-Scale Storage Systems”, IEEE Transactions on Parallel and Distributed Systems (**TPDS**), Vol.28, No.3, 2017, pages:619-632.

### WORK-IN-PROGRESS REPORTS & POSTERS

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1. Zhangyu Chen, Yu Hua, Pengfei Zuo, **Yuanyuan Sun**, Yuncheng Guo, “Efficient Similarity-aware Image Compression via Approximation for NVM-based Main Memory”, Poster in the 10th Annual Non-volatile Memories Workshop (**NVMW**), 2019.
2. **Yuanyuan Sun**, Yu Hua, Song Jiang, Qiuyu Li, Shunde Cao, Pengfei Zuo, “A Fast and Cost-Efficient Hashing Index Scheme for Cloud Storage Systems”, Work-in-Progress Report and Poster in USENIX Conference on File and Storage Technologies (**FAST**), 2017.
3. Pengfei Zuo, Yu Hua, Ming Zhao, Wen Zhou, Yuncheng Guo, **Yuanyuan Sun**, “Enhancing Lifetime and Performance of Non-Volatile Memories through Eliminating Duplicate Writes”, Work-in-Progress Report and Poster in USENIX Conference on File and Storage Technologies (**FAST**), 2017.
4. Pengfei Zuo, Yu Hua, Dan Feng, Zhenhua Nie, Min Fu, **Yuanyuan Sun**, “E-STORE: An Energy-constrained Smartphone Storage for Near Real-time Disaster Image Sharing”, Poster in the 13th USENIX Conference on File and Storage Technologies (**FAST**), 2015.

### REVIEW EXPERIENCE

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IEEE Transactions on Parallel and Distributed Systems

### OPEN-SOURCE CODES

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🔗 <https://github.com/csunny>

1. **SmartCuckoo**: A fast and cost-efficient hashing index scheme for cloud storage systems
2. **DLSH**: A distribution-aware LSH scheme for approximate nearest neighbor search in cloud computing
3. **MinCounter**: A simple implementation of Cuckoo hashing algorithm for mitigating hash collisions
4. **NEST**: Locality-aware Approximate Query Service for Cloud Computing

### HONORS AND AWARDS

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ACM SOSP Student Scholarships awarded by Google	2017
ACM SoCC Student Scholarship	2017
USENIX ATC Grants for Women	2017
National Scholarship for Ph.D Graduate Students	2017
Excellent Graduate Student in HUST	2017
Excellent Graduate Student in HUST	2016
ZhiXing Excellent Graduate Scholarship in HUST	2016
Excellent Graduate Student in HUST	2015