Jian Zhou

Postdoc in Computer Engineering

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Education

2014–2018 **Ph.D in Computer Engineering**, *University of Central Florida*, Orlando, USA.

2010–2016 **Ph.D in Computer Science**, *Huazhong University of Science and Technology*, Wuhan, China.

2004–2008 **Bachelor in Automation Engineering**, *Wuhan University of Science and Technology*, Wuhan, China.

Employment

2018–Now **PostDoc Associate in Computer Engineering**, *University of Central Florida*, Orlando, USA.

- This work resulted in a publication in **ISCA**. Two other research is ongoing.

2014–2018 **Research Assistant in Computer Engineering**, *University of Central Florida*, Orlando, USA.

- This work resulted in three publications in **TC**, **TPDS**, and **ICDD**.

Research Intreast

Non-volatile Memory (NVM).

Solid-state Drive (SSD).

Virtual Memory Management.

Data Analysis Framework and Infrastructures.

Neural Networks and Machine Learning.

Teaching

2019 Fall **Data Intensive Computing**.

- Co-instructor for data analytic and machine learning techniques. Create and grade assignments.

2019 Spring **Performance Evaluation of Computer and Communication Systems**.

- Co-instructor for simulators to evaluate the performance of computer systems. Create and grade assignments.

2018 Fall **Computer Architecture**.

- Co-instructor for simulators used for different computer architecture research, as well as programming frameworks runs cluster and GPUs. Create and grade assignments.

Patent

2015 **Implementation of an SSD flash translation layer**, *Publication number: CN 102981963 B*, Application number: CN 201210427484.

2014 **Multiple Criteria Optimization for Storage System**, *Publication number: CN 103744739 A*, Application number: CN 201410031903.

2014 **Method for Improving Reliability of Storage System**, *Publication number: CN 103761057 A*, Application number: CN 201410024967.

Copyrighted Software

2009 **Power Evaluate (2010SR001512)**.

- Evaulate the power consumption of the storage systems.

2009 **Storage Intensity Controllable Workload Generator (2010SR002552)**.

- Control the workload intensity in the performance test of a storage system.

Research Grants

2017–2020 **US National Science Foundation Grant CCF-1527249**, *SHF: Small: Developing a Highly Efficient and Accurate Approximation System for Warehouse-Scale Computers with the Sub-dataset Distribution Aware Approach.*

- Role: Primary contributer for the sub-tasks.

2015–2018 **US National Science Foundation Grant CCF-1527249**, *SHF: Small: Multi-criteria optimization control for temperature constrained energy efficient data center using fuzzy decision making theory*.

- Role: Primary writer for the proposal.

2013–2017 **US National Science Foundation Grant CCF-1337244**, *NSF XPS: Collaborative Research: A Scalable and Distributed System Framework for Compute-Intensive and Data-Parallel Applications*, ..

- Role: Primary contributer for the sub-tasks.

Professional Service

Journals, *I served as a reviewer for top journals such as **TC**, **TPDS** and **TCC**.*

Conferences, *I also served as publication chair, registration chair, website chair and external reviewer for 2017 **CyberSciTech**, **DASC**, **PICOM**, **DATACOM**.*

Selected Publications

2020 **Jian Zhou**, Amro Awad, and Jun Wang. “Lelantus: Fine-Granularity Copy-On-WriteOperations for Secure Non-Volatile Memories”. In: *ACM/IEEE 47th International Symposium on Computer Architecture **(ISCA)**.*

2019 **Jian Zhou** and Jun Wang. "IOMeans: Classifying Multi-concurrent I/O Threads Using Spatio-Tempo Mapping". In: *2019 IEEE International Conference on High Performance Big Data and Intelligent Systems (HPBD&IS)*.

Jun Wang, **Jian Zhou**, Liangding Li, Jiapeng Chi, Feiling Yang, and Dezhi Han. "Deep Feature Based on Convolutional Auto-Encoder for Compact Semantic Hashing". In: *IOP Publishing Journal of Physics: Conference Series*.

2018 Dan Huang, Dezhi Han, Jun Wang, Jiangling Yin, Xunchao Chen, Xuhong Zhang, **Jian Zhou**, and Mao Ye. "Achieving Load Balance for Parallel Data Access on Distributed File Systems". In: *IEEE Transactions on Computers (TC)*.

Jian Zhou, Dezhi Han, Jun Wang, Xiaobo Zhou, and Changjun Jiang. "A correlation-aware page-level ftl to exploit semantic links in workloads". In: *IEEE Transactions on Parallel and Distributed Systems* ***(TPDS)***.

Jian Zhou and Jun Wang. "ArchSampler: Architecture-Aware Memory Sampling Library for In-Memory Applications". In: *36th IEEE International Conference on Computer Design* ***(ICCD)***.

Jian Zhou, Huafeng Wu, and Jun Wang. "ApproxSSD: Data Layout Aware Sampling on an Array of SSDs". In: *IEEE Transactions on Computers* ***(TC)***.

2017 Dan Huang, Dezhi Han, Jun Wang, Jiangling Yin, Xunchao Chen, Xuhong Zhang, **Jian Zhou**, and Mao Ye. "Achieving Load Balance for Parallel Data Access on Distributed File Systems". In: *IEEE Transactions on Computers (TC)*.

Dan Huang, Jun Wang, Qing Liu, Xuhong Zhang, Xunchao Chen, and **Jian Zhou**. "DFS-container: achieving containerized block I/O for distributed file systems". In: *ACM Proceedings of the 2017 Symposium on Cloud Computing (SOCC)*.

Meng Zhang, Fei Wu, He Huang, Qian Xia, **Jian Zhou**, and Changsheng Xie. "FPGA-based failure mode testing and analysis for MLC NAND flash memory". In: *IEEE Proceedings of the Conference on Design, Automation & Test in Europe (DATE)*.

Xunchao Chen, Jun Wang, and **Jian Zhou**. "Promoting MLC STT-RAM for the Future Persistent Memory System". In: *15th IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC)*.

You Zhou, Fei Wu, Ping Huang, Xubin He, Changsheng Xie, and **Jian Zhou**. "Understanding and Alleviating the Impact of the Flash Address Translation on Solid State Devices". In: *ACM Transactions on Storage (TOS)*.

2016 **Jian Zhou**, Xunchao Chen, and Jun Wang. "ApproxSSD: Fast Data Sampling on SSD Arrays". In: *6th Workshop on Architectures and Systems for Big Data, in conjunction with ISCA*.

Jian Zhou, Xunchao Chen, Jun Wang, Fei Wu, You Zhou, and Changsheng Xie. "Leveraging Semantic Links for High Efficiency Page-Level FTL Design". In: *The International Workshop of Software-Defined Data Communications and Storage, in conjunction with ICDCS*.

Jian Zhou, Jun Wang, Wu Fei, You Zhou, and Changsheng Xie. "Develop A Fast Flash Translation Layer by Exploiting Block-Level I/O Correlation". In: *7th Annual Non-Volatile Memories Workshop*.

Jian Zhou, Jun Wang, Fei Wu, and Changsheng Xie. "TEES: A novel multiple criteria optimization scheme for temperature-constrained energy efficient storage". In: *Elsevier Journal of Parallel and Distributed Computing* ***(JPDC)***.

Jun Wang, Jianglin Yin, **Jian Zhou**, Xuhong Zhang, Tyler Lukasiewicz, Dan Huang, Xunchao Chen, and Ruijun Wang. "DataNet: A Data Distribution-aware Method for Sub-dataset Analysis On Distributed File Systems". In: *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*.

Xunchao Chen, Navid Khoshavi, **Jian Zhou**, Dan Huang andRonald F DeMara, Jun Wang, Wujie Wen, and Yiran Chen. "AOS: adaptive overwrite scheme for energy-efficient MLC STT-RAM cache". In: *ACM Proceedings of the 53rd Annual Design Automation Conference (DAC)*.

2015 **Jian Zhou**, Jun Wang, Fei Wu, Changsheng Xie, and Dezhi Han. "On the Cooling of Energy Efficient Storage". In: *IEEE International Conference on Networking, Architecture and Storage* ***(NAS)***.

Jiangling Yin, Jun Wang, **Jian Zhou**, Tyler Lukasiewicz, Dan Huang, and Junyao Zhang. "Opass: Analysis and optimization of parallel data access on distributed file systems". In: *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*.

Junyao Zhang, Qingdong Wang, Jiangling Yin, **Jian Zhou**, and Jun Wang. "PERP: Attacking the balance among energy, performance and recovery in storage systems". In: *Elsevier Journal of Parallel and Distributed Computing (JPDC)*.

You Zhou, Fei Wu, Ping Huang, Xubin He, Changsheng Xie, and **Jian Zhou**. "An efficient page-level FTL to optimize address translation in flash memory". In: *ACM Proceedings of the Tenth European Conference on Computer Systems (Eurosys)*.

2014 Junyao Zhang, Jiangling Yin, Jun Wang, and **Jian Zhou**. "On Balance among Energy, Performance and Recovery in Storage Systems". In: *IEEE 34th International Conference on Distributed Computing Systems Workshops (ICDCSW)*.

2011 Zhuo Liu, **Jian Zhou**, Weikuan Yu, Fei Wu, Xiao Qin, and Changsheng Xie. "Mind: A black-box energy consumption model for disk arrays". In: *IEEE International Green Computing Conference and Workshops (IGCC)*.

2010 Zhuo Liu, Fei Wu, Xiao Qin, Changsheng Xie, **Jian Zhou**, and Jianzong Wang. "TRACER: A trace replay tool to evaluate energy-efficiency of mass storage systems". In: *IEEE International Conference on Cluster Computing (CLUSTER)*.