

MENGXING LIU

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EDUCATION

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| Tsinghua University
PhD student, Computer Science, Tsinghua University, Beijing.
Advisor: Prof. Yongwei Wu | September 2015 - Present |
| Tsinghua University
Bachelor, Computer Science, Tsinghua University, Beijing.
GPA: 90/100; RANK: 19/123 | September 2010 - July 2015 |

INTERNSHIP

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| Summer Intern at Tencent
<i>App Developer</i> | July 2013 - August 2013
<i>Shenzhen, China</i> |
| <ul style="list-style-type: none">· I implemented an enterprise office assistance based on Wechat public platform, which supports inner contact, calendar and signing in. | |
| Full time Intern at Microsoft Research Asia
<i>Researcher Intern</i> | September 2016 - March 2017
<i>Beijing, China</i> |
| <ul style="list-style-type: none">· In the first three month I investigated how to build durable transactions using locks on non-volatile memory. The work has been submitted to ACM Transactions on Storage.· In the next three month I took part in the RAIN project, which is a RAID-like redundant storage system using non-volatile memory. I gave the proof of RAIN theory, and implemented some popular OLTP benchmarks using RAIN, such as TPC-C and TATP. | |

SELECTED PROJECT

DFS-Rsync: Remote Synchronization Between Distributed File Systems

We offered a new interface for distributed file system: remote synchronization (RSync), to synchronize one file in two distributed file systems. Check-sum algorithms such as Alder-32 and MD5 are used to find and check Matched block. Matched blocks can be read from the local system so that the network transmission is omitted. We implemented it on HDFS and RSync is about 10x faster than copying directly

SSEvent: Sophisticated Scheduling Event

Current servers need to handle requests from multiple clients at the same time. Multi-threaded programming model is easy to understand but less efficient; Event-driven model has higher performance but is hard to develop. We implemented SSEvent with C++ boost co-routine, allowing programmers to write event-driven codes in multi-threaded alike schema at no more than 5% performance overhead.

DudeTM: Durable Decoupled Transactional Memory

We designed and implemented a transactional memory library on non-volatile memory, providing an easy-to-use interface for programmers to build ACID transactions. The key idea is decoupling a transaction into three totally decoupled components to overcome performance overhead of traditional redo logging and undo logging mechanisms. It obtains 2x to 4x speedup than the state-of-art technique.

PUBLICATION LIST

1. DudeTX: Durable Decoupled Transaction
Mengxing Liu, Mingxing Zhang, Kang Chen, Xuehai Qian, Yongwei Wu, and Jinglei Ren.
Submitted to *ACM Transactions on Storage(TOS)*
2. DudeTM: Building Durable Transactions with Decoupling for Persistent Memory
Mengxing Liu, Mingxing Zhang, Kang Chen, Xuehai Qian, Yongwei Wu, and Jinglei Ren.
Proceedings of the 22nd ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS'17).

SCHOLARSHIPS AND CERTIFICATES

SEP.2010	Tsinghua First Class Scholarship for Freshman (CNY 10,000 for each year)
SEP.2011	National Endeavor Fellowship (CNY 5,000)
OCT.2014	Peer-to-Peer Lending Fellowship (CNY 5,000)
JUN.2015	Excellent Theses Award (6/123)
JUN.2015	Excellent Graduate in Department of Computer Science and Technology.