Shuai Mu

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Professional Experience

STONY BROOK UNIVERSITY, COMPUTER SCIENCE DEPARTMENT   Stony Brook, NY

2019/01 - Present	Assistant Professor
2018/08 - 2019/01	Assistant Professor (On leave)

NEW YORK UNIVERSITY, COURANT INSTITUTE   New York, NY

2017/08 - 2018/08	Assistant Professor / Faculty Fellow (Lecturer)
2015/08 - 2017/08	Post-Doctoral Associate
	Advisor: Michael Walfish

UNIVERSITY OF SOUTHERN CALIFORNIA   Los Angeles, CA

2015/01 - 2015/07	Visiting Scholar
	Advisor: Wyatt Lloyd

NEW YORK UNIVERSITY, COURANT INSTITUTE   New York, NY

2013/09 - 2014/10	Visiting Scholar
	Advisor: Jinyang Li

Education

TSINGHUA UNIVERSITY   Beijing, China
Ph.D. in Computer Science, 2015
Advisor: Yongwei Wu, Kang Chen; Supervisor: Weimin Zheng

CHINA AGRICULTURAL UNIVERSITY   Beijing, China
B.S. in Computer Science, 2010

Committee, Panel, Referee

2025	EuroSys
2024	SOSP, USENIX ATC
2023	NSDI, ICDCS, SIGCOMM
2022	ASPLOS (ERC)
2021	ApSys, NSDI, TPDS
2020	ApSys, USENIX ATC, Distributed Computing, NSF CNS Small, TPDS
2019	ApSys, CACM
2018	TPDS

Advisees

Current

2023/08-Present   Zihao Zhang (Postdoc)

2020/08-Present   Weihai Shen (PhD)

2022/08-Present   Santa Shithil (PhD)

2022/08-Present   Ze Tang (PhD)

2023/05-Present   Kumar Shivam (PhD)

2023/01-Present   Ayush Jain (MS)

2023/01-Present   Devika Sudheer (MS)

2023/01-Present   Nilesh Gajwani (MS)

2023/01-Present   Radhika Agarwal (MS)

Past

2019/06-2020/06   Mrityunjay Kumar (MS, first job: VMWare)

2020/01-2020/12   Ritesh Sinha (MS, first job: HP)

2020/01-2020/12   Satya Jain (MS, first job: VMWare)

2020/01-2021/06   Yida Wu (MS, first job: Cloudera)

2020/01-2021/06   Ansh Khanna (MS, first job: Google)

Publications

[1] Haonan Lu, **Shuai Mu**, Wyatt Lloyd, and Siddhartha Sen. NCC: Natural concurrency control for strictly serializable datastores by avoiding the timestamp-inversion pitfall. In *Proceedings of USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, July 2023.

[2] Jian Zhang, Ye Ji, **Shuai Mu**, and Cheng Tan. Viper: A fast snapshot isolation checker. In *Proceedings of ACM European Conference on Computer Systems (EuroSys)*, May 2023.

[3] Mohammadreza Alimadadi, Yida Wu, Sergey Madaminov, Shenghsun Cho, Michael Ferdman, Peter Milder, and **Shuai Mu**. Waverunner: An elegant approach to hardware acceleration of state machine replication. In *Proceedings of USENIX Conference on Networked Systems Design and Implementation (NSDI)*, April 2023.

[4] Xuhao Luo, Weihai Shen, **Shuai Mu**, and Tianyin Xu. Depfast: Orchestrating code of quorum systems. In *Proceedings of USENIX Conference on Annual Technical Conference (ATC)*, July 2022.

[5] Weihai Shen, Ansh Khanna, Sebastian Angel, Siddhartha Sen, and **Shuai Mu**. Rolis: a software approach to efficiently replicating multi-core transactions. In *Proceedings of ACM European Conference on Computer Systems (EuroSys)*, April 2022.

[6] Andrew Yoo, Yuanli Wang, Ritesh Sinha, **Shuai Mu**, and Tianyin Xu. Fail-slow fault tolerance needs programming support. In *Proceedings of USENIX Workshop on Hot Topics in Operating Systems (HotOS)*, June 2021.

[7] Siyuan Zhou and **Shuai Mu**. Fault-tolerant replication with pull-based consensus in MongoDB. In *Proceedings of USENIX Conference on Networked Systems Design and Implementation (NSDI)*, February 2021.

[8] Cheng Tan, Changgeng Zhao, **Shuai Mu**, and Michael Walfish. Cobra: Making transactional key-value stores verifiably serializable. In *Proceedings of USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, November 2020.

[9] Zhaoguo Wang, Changgeng Zhao, **Shuai Mu**, Haibo Chen, and Jinyang Li. On the parallels between paxos and raft, and how to port optimizations. In *Proceedings of ACM Symposium on Principles of Distributed Computing (PODC)*, July 2019.

[10] **Shuai Mu**, Sebastian Angel, and Dennis Shasha. Deferred runtime pipelining for contentious multi-core software transactions. In *Proceedings of ACM European Conference on Computer Systems (EuroSys)*, March 2019.

[11] Yu Lin Chen, **Shuai Mu**, Jinyang Li, Cheng Huang, Jin Li, Aaron Ogus, and Douglas Phillips. Giza: Erasure coding objects across global data centers. In *Proceedings of USENIX Conference on Annual Technical Conference (ATC)*, July 2017.

[12] Haonan Lu, Christopher Hodsdon, Khiem Ngo, **Shuai Mu**, and Wyatt Lloyd. The SNOW theorem and latency-optimal read-only transactions. In *Proceedings of USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, November 2016.

[13] **Shuai Mu**, Lamont Nelson, Wyatt Lloyd, and Jinyang Li. Consolidating concurrency control and consensus for commits under conflicts. In *Proceedings of USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, November 2016.

[14] Zhaoguo Wang, **Shuai Mu**, Yang Cui, Han Yi, Haibo Chen, and Jinyang Li. Scaling multicore databases via constrained parallel execution. In *Proceedings of ACM International Conference on Management of Data (SIGMOD)*, June 2016.

[15] **Shuai Mu**, Yang Cui, Yang Zhang, Wyatt Lloyd, and Jinyang Li. Extracting more concurrency from distributed transactions. In *Proceedings of USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, October 2014.

[16] **Shuai Mu**, Kang Chen, Yongwei Wu, and Weimin Zheng. When Paxos meets erasure code: reduce network and storage cost in state machine replication. In *Proceedings of ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC)*, June 2014.

[17] **Shuai Mu**, Kang Chen, Pin Gao, Feng Ye, Yongwei Wu, and Weimin Zheng. μLibCloud: Providing high available and uniform accessing to multiple cloud storages. In *Proceedings of ACM/IEEE International Conference on Grid Computing (Grid)*, May 2012.

Teaching

Distributed Systems, SBU CSE-535	23Fa, 22Fa, 20Fa, 19Fa, 19Sp
Software Engineering, SBU CSE-416	22Sp
Computer System Organization, NYU CSCI-UA.0201	18Sp