

## Yan Zhai

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EDUCATION	Ph.D of Computer Science at University of Wisconsin Madison Research Assistant of Prof. Michael Swift	Sep 2012 - present
	Master of Computer Science at Tsinghua University Research Assistant of Prof. Wenguang Chen	Aug 2009 - Jun 2012
	Bachelor of Computer Science at Beihang University	Sep 2005 - Jun 2009
WORK EXPERIENCES	Software Engineer Intern at Google inc. Working on CPU power modeling and measuring. Results were published in Usenix ATC.	May-Aug 2013, May-Aug 2014
PURPOSE	Expect to graduate at December 2018. Seek job of software engineer, and prefer positions about developing secure system, scalable system, or solving any challenging system and networking problems.	
SKILL SUMMARY	<ul style="list-style-type: none"><li>• Technical expertise: Security and Performance of Cloud Systems and Networking</li><li>• C/C++/x86-assembly(12yr), Python(5yr), Golang(2yr), Java(2yr), Datalog(1yr)</li><li>• Linux(10yr), AWS-EC2(8yr), Openstack(5yr), Docker(2yr), Kubernetes(1yr)</li><li>• Proficient in GNU and Linux common tools, Git, Valgrind, etc</li></ul>	
PH.D RESEARCH	<b>Building New Generation Cloud Authorization Framework</b> Current cloud authorization systems fail to leverage rich security information scattered across IaaS, PaaS, and SaaS cloud about the requesting programs. I built a cloud authorization framework that allows different cloud layers to uniformly and securely access such information, and enabled innovative usage patterns like secure data sharing between distrustful cloud tenants with minimal overhead.  <b>My Role in Project</b> <ul style="list-style-type: none"><li>• Leading discussions and presentations</li><li>• Major coder, contributing 80% of more than 20,000 lines of code in:<ul style="list-style-type: none"><li>• Openstack (VM and network management, authentication, object store)</li><li>• Docker and Kubernetes (container and network management)</li><li>• Linux kernel (IPv4 TCP stack)</li><li>• Spark (job initialization)</li><li>• HDFS (name and data node access control)</li><li>• MySQL (session access control)</li></ul></li></ul>	
OTHER SELECTED PROJECTS	I contributed at least 50%: <ul style="list-style-type: none"><li>• HPC evaluation(2009.9-2012.6): Master dissertation. Analyzing performance of HPC applications on top-3 super computers in China, and AWS cloud.</li><li>• BLAS optimization(2009.1-2009.6): Bachelor dissertation. Optimizing linear algebra library on Loongson3a architecture. Focusing on matrix multiply.</li><li>• Mini-cloud(2013.1-2013.3): Optimizing Linux boot in AWS. Result: 58sec → 6sec.</li><li>• TPC-C (2010.1-2012.1): Implementing OTLP benchmark for high end server.</li></ul>	

- Multipath Tor(2010.5-2010.10): Shielding Tor network against traffic analysis by using multiple communication path.
- TCP fast open(2011.1-2011.4): Another implementation of TCP fast open in Linux kernel.

## PUBLICATIONS

- [1] Y. Zhai, Q. Cao, J. Chase, and M. Swift. Tapcon: practical third-party attestation for the cloud. In *9th USENIX Workshop on Hot Topics in Cloud Computing (HotCloud 17)*. USENIX Association, 2017.
- [2] Y. Zhai, L. Yin, J. Chase, T. Ristenpart, and M. Swift. Cqstr: Securing cross-tenant applications with cloud containers. In *Proceedings of the Seventh ACM Symposium on Cloud Computing*, pages 223–236. ACM, 2016.
- [3] Y. Zhai, X. Zhang, S. Eranian, L. Tang, and J. Mars. Happy: Hyperthread-aware power profiling dynamically. In *USENIX Annual Technical Conference*, pages 211–217, 2014.
- [4] R. Jellinek, Y. Zhai, T. Ristenpart, and M. M. Swift. A day late and a dollar short: The case for research on cloud billing systems. In *HotCloud*, 2014.
- [5] A. Everspauagh, Y. Zhai, R. Jellinek, T. Ristenpart, and M. Swift. Not-so-random numbers in virtualized linux and the whirlwind rng. In *Security and Privacy (SP), 2014 IEEE Symposium on*, pages 559–574. IEEE, 2014.
- [6] M. Liu, Y. Jin, J. Zhai, Y. Zhai, Q. Shi, X. Ma, and W. Chen. Acic: automatic cloud i/o configurator for hpc applications. In *Proceedings of the International Conference on High Performance Computing, Networking, Storage and Analysis*, page 38. ACM, 2013.
- [7] S. Niu, J. Zhai, X. Ma, M. Liu, Y. Zhai, W. Chen, and W. Zheng. Employing checkpoint to improve job scheduling in large-scale systems. In *Workshop on Job Scheduling Strategies for Parallel Processing*, pages 36–55. Springer, 2012.
- [8] Y. Zhai, M. Liu, J. Zhai, X. Ma, and W. Chen. Cloud versus in-house cluster: evaluating amazon cluster compute instances for running mpi applications. In *State of the Practice Reports*, page 11. ACM, 2011.
- [9] M. Liu, J. Zhai, Y. Zhai, X. Ma, and W. Chen. One optimized i/o configuration per hpc application: leveraging the configurability of cloud. In *Proceedings of the Second Asia-Pacific Workshop on Systems*, page 15. ACM, 2011.