Tao Zhang

Curriculum Vitae

SN304, 201 S. Columbia St.
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Education

2016 – Present **The University of North Carolina at Chapel Hill**.
Ph.D. Candidate in Computer Science, Advisor: Donald E. Porter

2013 – 2016 **Stony Brook University**.
Ph.D. Candidate in Computer Science (Transfered to UNC-CH), Advisor: Donald E. Porter
M.S. in Computer Science (August, 2016)

2006 – 2013 **Peking University, School of Electronics Engineering and Computer Science**.
M.S. in Computer Science (July, 2013)
B.S. in Computer Science (July, 2010)

- Excellent B.S. Thesis of 2010 in EECS

Publications

Oct. 2015 **How to Get More Value From Your File System Directory Cache**, SOSP '15.
Chia-Che Tsai, Yang Zhan, Jayashree Reddy, Yizheng Jiao, **Tao Zhang**, and Donald E. Porter

Mar. 2015 **Teaching Virtualization by Building a Hypervisor**, SIGCSE '15.
Abhinand Palicherla, **Tao Zhang**, and Donald E. Porter

Work Experience

2013 **Member of Technical Staff Intern**, *VMware Information Technology(China) Co. Ltd*, Beijing.

Sep. 2008 **Volunteer in Beijing 2008 Paralympic Games**, *Beijing National Stadium*.

Projects

2014-2015 **Directory cache optimization (SOSP '15)**, We proposed a new design of Linux kernel's directory cache, which can look up a directory in a constant number of hash table operations, separates finding paths from permission checking, memoizes the results of access control checks, uses signatures to accelerate lookup, and reduces miss rates through caching directory completeness.

- My responsibilities include permission and access control cache design and implementation, and overhead breakdown profiling.

2014-2015 **Multi-threading support for Inktag**, Inktag (ASPLOS '13) is a virtualization-based solution which provides strong safety guarantees for high-assurance applications running on untrusted operating systems. The original Inktag didn't support multi-threading, which is prevalent in nowadays' applications. In this project, we added pthread support for Inktag, and guarantee the multi-threading applications are still protected against untrusted OS.

2013-2014 **JOS-VMM (SIGCSE '15)**, JOS is a UNIX-like compact operating system built for teaching purpose. On top of JOS, We built HOSS, a hypervisor from scratch. Then based on HOSS, we developed a set of assignments, to help students learn about technical details about virtualization and related problems. The output of this project has been successfully applied in virtualization course.