Chinmay Kulkarni

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CONTACT

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EDUCATION

University of Utah ..... Salt Lake City, USA
Doctor of Philosophy in Computer Science, Ongoing
Advised by Prof. Ryan Stutsman

PUBLICATIONS

Adaptive Placement for In-memory Storage Functions **ATC 2020**
Ankit Bhardwaj, **Chinmay Kulkarni**, and Ryan Stutsman

Splinter: Bare-Metal Extensions for Multi-Tenant Low-Latency Storage **OSDI 2018**
Chinmay Kulkarni, Sara Moore, Mazhar Naqvi, Tian Zhang, Robert Ricci, and Ryan Stutsman

Rocksteady: Fast Migration for Low-latency In-memory Storage **SOSP 2017**
Chinmay Kulkarni, Aniraj Kesavan, Tian Zhang, Robert Ricci, and Ryan Stutsman

RESEARCH

SoFASTER: Scaling Out the FASTER Key-Value Store
Microsoft Research and University of Utah, May 2018 - Present
Collaborating with Microsoft Research on scaling out FASTER, a key-value store that uses a latch free hash table and a concurrent log-structured record store to service 160 million updates per second. Challenges include maintaining high throughput during scale-up and scale-down operations.

Bespin: Scaling an Operating System to Many Cores
VMware Research and University of Utah, May 2019 - Present
Collaborating with VMware Research on a many-core operating system written in Rust. Our system currently boots on a single core. We are now exploring whether we can apply existing log-based, data structure replication techniques to achieve good many-core operating system scalability.

Splinter: Bare-Metal Extensions for Multi-Tenant Low-Latency Storage
University of Utah, November 2017 - November 2018
Worked on Splinter, a multi-tenant low-latency store that can be extended using type- and memory-safe code written in Rust. Splinter can isolate more than 1000 tenants per server while servicing 3.5 million operations per second with a median latency of 9 microseconds.

Rocksteady: Fast Migration for Low-latency In-memory Storage
University of Utah, October 2016 - October 2017
Designed, implemented, and evaluated Rocksteady, a fast and low impact migration protocol for the RAMCloud in-memory key-value store. Rocksteady can migrate 256 GB of data in less than six minutes while maintaining a tail latency of less than 250 microseconds.

INDUSTRY

Google ..... Research Intern, Summer 2020, USA

VMware ..... Research Intern, Summer 2019, USA

Microsoft ..... Research Intern, Summer 2018, USA

SERVICE

External Reviewer, **HotCloud'20**

AWARDS

Google PhD Fellowship
Systems and Networking, 2019