ERIC ZHOU

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EXPERIENCE

Software Engineer at ***Microsoft*** *March 2020 - Present*

- Bringing up Azure Frontdoor's next generation dataplane using Nginx on Linux to eventually supersede the Windows implementation.
- Writing spartan C code to be super-scale, light-weight and deterministic, designed to minimize bytes per cycle with extreme stability.
- Keeping a focus on solid fundamentals: I designed an entirely new error type and introduced it across the entire existing codebase, **reduced the service startup time by 2x** by eliminating redundant DNS resolutions, made the pool allocator and other core components of Nginx thread safe, and more.
- Meeting customer needs: to reach parity in WAF with Azure Frontdoor on Windows, I wrote an HTTP multipart data parser from scratch, implemented custom rule config translation, implemented several transformation functions for our WAF evaluation engine, and more.

Software Engineer at ***Microsoft*** *May 2019 - March 2020*

- Performance optimizations in the partition layer of Azure Storage, which indexes all tables in the system.
- Contributed to a large scale C++ development environment with a huge codebase.
- Most notably, I wrote code to allow comparison of compressed rows in anchor tree data pages without decompressing, **speeding up table lookups by 3x**.

VLSI Intern at ***NVIDIA*** *Summer 2018*

- Ran self-heating experiments with Cadence Voltus on an unreleased 7nm graphics card.
- Showed with simulated results that self-heating effects don't significantly impact the lifetime of the chip.

Software Development Engineer Intern at ***Amazon*** *Summer 2017*

- Developed an internal tool for Amazon Fresh enabling safe and quick updates to merchant schedules, going from a manual process that could take **over a day to just a few minutes**.
- Wrote both AngularJS frontend and the Scala backend, which interfaces with other Fresh services.

NumPyWren at ***RISELab*** with Professor Jonathan Ragan-Kelley *Fall 2018*

- Enabled multicore machines running serverless functions to more closely approximate the efficient communication patterns of a traditional MPI cluster by caching data.
- Wrote a highly concurrent software cache in C++ that caches data from an object store like Amazon S3.

uGSI for ***CS162 (Operating Systems)*** at UC Berkeley *Fall 2018 - Spring 2019*

- Other than typical TA responsibilities, I evaluated many student operating system design documents, identifying ideas that would lead to success while providing guidance for designs that needed work.

SKILLS

Languages C • Python • C++ • Java • Go • Perl • Javascript
Main Interests Distributed systems • Operating systems • Virtualization • Containers • Networking
Side Projects I've written my own toy operating system, a web application for splitting the grocery bill with my roommates, some nifty utilities to keep myself updated with anime, I host my own image board in a Docker container on an Azure VM, and so on...

EDUCATION

University of California, Berkeley *August 2015 - May 2019*
B.S. Electrical Engineering and Computer Sciences ***GPA** 3.95/4*
Honors Honors to Date • Dean's List • Eta Kappa Nu • Tau Beta Pi
Relevant Courses CS162 Operating Systems (A+) • CS262A Advanced Topics in Computer Systems • CS164 Programming Languages and Compilers • CS186 Databases • CS170 Algorithms • CS189 Machine Learning • CS161 Computer Security • EECS151 Digital Design and Integrated Circuits (A+)