Aneesh Durg

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EDUCATION

University of Illinois at Urbana-Champaign
Aug 2015-May 2019

Recieved BS in Computer Science & Mathematics with **High Distinction**

PROGRAMMING LANGUAGES

C, PYTHON, TYPESCRIPT, JAVASCRIPT, RUST, BASH, C++ GO, D, HASKELL, GLSL

LIBRARIES/ FRAMEWORKS

ML/AI:
CAFFE, OPENCV, PYTORCH, TENSORFLOW

Web Backend:
FLASK, TORNADO, DJANGO, NODE.JS

Web Frontend:
REACT, PEERJS, WEBGL, D3.JS, JQUERY

Containers/OS:
SYSTEMD, SYSTEMD-NSPAWN, D-BUS, DOCKER, LXC

WORK EXPERIENCE

Member of Technical Staff — Aug 2019-Present
Qumulo Inc. — Seattle, WA

- Collaboratively designed a solution for reducing server downtime during upgrades
  - Used **systemd-nspawn** for containerization
  - Leveraged **systemd** for managing services
  - Used **dbus** to allow processes to break out of a container
- Modernized python code by adding types via **mypy**
- Re-desgined and refactored the **SMB** implementation for better memory safety
  - Implemented smart pointer-esque objects in C
- Helped implement the following **SMB** features
  - SMB 3.1.1 negotiation, Server-side copy, Encryption

Systems Programming Course Lead — Jan 2017-May 2019
CS241 @ UIUC — Urbana, IL

- Development lead for assignments, Lab/Office hours assistant, Honors mentor.
- Redesigned assignments to be more engaging
  - Created a FUSE-esque library that redirects linux filesystem calls, but doesn't leave stale mounts on crashes, allowing students to attempt building a file-backed fs (and easily debug it).
  - Introduced a "implement a container" assignment.
- Mentored honors students to complete projects exploring areas such as distributed systems, compilers and linux kernel development.

Software Engineering Intern — May 2018-Aug 2018
Qumulo Inc. — Seattle, WA

- Used **linux namespaces** to speed up testing time by up to 5x.
- Designed and developed a IP failover in **AWS**.

PROJECTS

Ephemeral — Typescript/React
http://aneeshdurg.me/ephemeral

- A distributed, peer-to-peer social media platform - without any backing storage
- Uses **RSA** encryption and signing to prove identity
- Requires an external server for an initial handshake and is entirely client driven afterwards
- Uses **peerjs** for peer-to-peer communication

What Is a Filesystem? — Javascript
http://aneeshdurg.me/what_is_a_filesystem

- An online interactive book/vizualization for students learning filesystem concepts.
- Implements a ext2-esque filesystem with animations to illustrate how a disk accesses occur.
- Features a terminal simulator which implements some standard `GNU/Linux` utilities.

CameraTheremin — JavaScript
https://aneeshdurg.me/CameraTheremin

- In-browser webcam gesture-based theremin (a musical instrument)
- Implemented all image processing functions required in Javascript/**WebGL**.