

Aneesh Durg

CONTACT

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aneeshdurg

EDUCATION

University of Illinois at
Urbana-Champaign

Aug 2015-May 2019

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

PROGRAMMING LANGUAGES

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

LIBRARIES/ FRAMEWORKS

ML/AI:

CAFFE, OPENCV,
PYTORCH, TENSORFLOW

Web Backend:

FLASK, TORNADO, DJANGO

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-designed 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/visualization 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**.

Algebraic C

C

<https://github.com/aneeshdurg/algebraic-c>

- Algebraic data types implemented in C.
- Leverages the **C preprocessor** to guarantee type safety.
- Built a custom preprocessor in **python** to aid code generation.