Aneesh Durg

CONTACT

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PROGRAMMING LANGUAGES

C, C++, D, Python, Go, JavaScript, Haskell, Bash, Sed

LIBRARIES/ FRAMEWORKS

ML/AI: Caffe, OpenCV, TensorFlow

Web: Django, Tornado, React, d3.js, JQuery

Other: OpenMP, MKL, cuBLAS, Numpy, DAAL

WORK EXPERIENCE

Course Lead Jan 2017-May 2019
Systems Programming (CS 241) — Urbana, IL

- Development lead for assignments, Lab/Office hours assistant, Honors mentor.
- Proposed and led initiative to redesign assignments to be more realistic such as:
  - Redesigned a filesystems assignment by creating a library that redirects filesystem calls, which students use to build a virtual filesystem.
  - Implemented a containers assignment where students build a docker-esque container framework using existing tools.
- Successfully mentored honors student teams to complete systems focused projects exploring areas such as distributed systems, compilers and writing kernel modules.

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

- Improved testing framework by using **linux namespaces** and sped up testing time by up to 5x.
- Designed developed a feature to enable IP failover in **AWS**.
- Learnt cloud networking best practices and extensively used the **AWS API**.

Machine Learning Intern May 2017-Aug 2017
Intel Corporation — Austin, TX

- Evaluated performance of **Intel Movidius Neural Compute stick (NCS)**. Proved a linear increase in speed when using multiple **NCS** devices.
- Made a proof of concept demonstrating potential performance gains by parallelizing NCS convolution.

Software Developer May 2016-Dec 2016
Hacklab Innovations — Bangalore, India

- Built AAMI - a reading assistant for the blind and visually impaired. Used technologies such as **OpenCV**, **Numpy**, **tesseract-ocr**, and **Caffe**.
- Developed and optimized a real-time imaging algorithm to find text in images and synthesize audio.

Game Developer & Research Assistant May 2016-May 2017
Project 415x with Prof. Cary Malkiewich & Prof. Jenya Sapir

- Developed an open source game to teach linear algebra concepts. `http://project415x.github.io/`

PROJECTS

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

- An online interactive book with vizualizations that help students learn about filesystem concepts.
- Features an implementation of a ext2-esque filesystem with animation to illustrate how a disk would be accessed.
- Features a terminal simulator which has many standard `GNU/Linux` utilities built in.

Pianux C
https://github.com/aneeshdurg/pianux

- Implemented a piano that plays music written to a linux file-like object.
- Invented a domain specific language to describe music, supporting syntax for loops and multiple output channels that can be dynamically added and removed.

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.

CameraTheremin JavaScript
https://aneeshdurg.me/CameraTheremin

- Built an in-browser webcam theremin that can play musical notes controlled by hand gestures.
- Implemented all image processing functions required.

EDUCATION

University of Illinois at Urbana-Champaign Aug 2015-May 2019
Recieved BS in Computer Science & Mathematics with High Distinction