Allen Liu Greater New York Area

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EDUCATION

Carnegie Mellon University | Pittsburgh, PA

Bachelor of Science in Computer Science · Minor in Robotics · GPA 3.5 · Expected Graduation: May 2022

Relevant Courses: Principles of Software Construction, Robot Kinematics and Dynamics, Software Foundations of Security and Privacy, Introduction to Machine Learning, Parallel and Sequential Data Structures

EXPERIENCE

Amazon Web Services | Seattle, WA (Remote)
Software Development Engineer Intern (CloudFormation Team) · **June 2020 - August 2020**
- Developing a query engine for customers to build complex queries using GraphQL against their CloudFormation data in order to reduce the number of API calls and client-side computation currently required for queries.
- Responsible for the project design, database and GraphQL schemas, and end to end implementation.
- Written in Java and built with various AWS services including AppSync, Lambda, DynamoDB, and DocumentDB.

Eberly Center | Pittsburgh, PA
Research Assistant · **November 2019 - April 2020**
- Applied machine learning and computer vision to analyze classroom data and generate useful metrics for professors to better understand their class dynamic and facilitate learning.
- Extracted and analyzed various audio metrics (RMS, peak levels, zero-crossing rate, SNR, etc.) via Librosa to determine a set of viable features to discriminate between human speech, background noise, and silence.
- Utilized scikit-learn to produce a voice activity detector that achieved 86% accuracy on our classroom test set.

CyLab (Visual Intel Studio) | Pittsburgh, PA
Research Assistant · **August 2019 - October 2019**
- Lead developer for an indoor navigation project - an Android app that utilizes the Google Maps API in combination with onboard sensors and existing building floor plans to track location indoors even when GPS is unavailable.

SKILLS

Comfortable developing applications and algorithms in Java (including some Android development), Python, and C.

Experienced with GraphQL, AWS Java SDK, git, mockito, scikit-learn, PyTorch, Arduino, Raspberry Pi, and CAD

Familiar with developing web applications and sites using Javascript (React, Node.js), HTML, and CSS (Bootstrap)

PROJECTS

News Cloud (PennApps 2019 Submission) - Chrome extension that overrides the new tab page with a word cloud automatically generated with trending phrases scrapped from various news sites. A Flask app written in Python (for web scraping and natural language processing) and Javascript (site and word cloud generation).
- Developed the front end and word cloud generation script (in pure JS) to generate the cloud on the fly while considering a variety of criteria such as adaptability for various aspect ratios and overlap prevention.

The Artist (2017 NJ TSA Animatronics - 1st Place) - A voice-controlled animatronic that mimics human behavior (eye gaze, speech, etc.) that draws various objects and text-based on specified voice commands.
- Served as Team Manager and Lead Programmer from 2014 to 2017.

for more details and other projects, please check out aliuliu121.github.io

EXTRACURRICULARS

CMU Fencing Club | Sabre · September 2018 - Current