Brian Lau

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Education

University of Maryland: College Park — College Park, MD
B.S. Computer Science and Mathematics — August 2021 - December 2024
GPA: **4.0**

Experience

Amazon - Amazon Display Ads (ADA) — May 2023 - August 2023
Software Development Engineering Intern — Boulder, Colorado

- Provided better insight into the "health" of over 1,500 high value actions (HVA) across multiple AWS accounts and regions through stage metric alarms and visible click/impression counts on an internal UI saving time for on call engineers, marketing managers, and internal advertisers.
- Implemented metric alarms based on the stages of an high-value action with React TypeScript, Java, AWS Lambda, CloudWatch, Redshift, and IAM.
- Set up API endpoints using Java and AWS Smithy in order to expose HVA metadata for use across multiple different packages.
- Displayed and improved visibility of click/impression counts through React TypeScript, a scheduled SQL query, AWS Lambda, Redshift, and S3.
- Introduced a dedicated section linking each HVA event to the appropriate upstream team, enabling on-call personnel to quickly identify and notify the relevant stakeholders in case of issues.

University of Maryland: College Park - CMSC — May 2022 - *Current*
Lead Teaching Assistant — College Park, Maryland

- Lead TA for CMSC122/131/132 (Introduction to Programming on the Web & Object-Oriented Programming I/II).
- Create rubrics and manage grading for exams and projects.
- Teach a discussion section of approximately 30 students on a bi-weekly basis, reviewing course content and exploring new topics.
- Hold weekly office hours and study sessions for students, helping answer questions and guiding them on projects.

Northrop Grumman - Mission Systems — May 2022 - August 2022
Software Engineering Intern — Baltimore, Maryland

- Created a custom Jira plugin with HTML, Java, and Python accompanied by the Atlassian SDK.
- Gathered real-time data on the current Jira server with web hooks and the Jira REST API.
- Built a web application with Java Servlet backend and HTML/CSS + Python frontend to display plugin information.
- Employed Jenkins and Git to streamline more efficient builds and tests of the plugin.
- Received active Secret security clearance.

Projects

Cloudify — December 2022 - February 2023

- A Spotify-based web-application which generates unique wordclouds based on a users top-50 artists.
- Amassed over 5,000 users in a week and over 10,000 generated wordclouds
- Utilized Python Flask for the back end and React Javascript for the front end.

NBA Hall of Fame Predictor — September 2022 - November 2022

- Scraped and cleaned 10,000 lines of NBA player data using Pandas and Numpy
- Created, trained, and utilized two classification machine learning algorithms (KNN and Random Forest) to predict whether an NBA player will end up in the Hall of Fame following his career.
- On a blind dataset, the models achieved accuracies up to 98%.

Strava Jokes (v2) — July 2022 - July 2023

- A Strava-based web application that allows users to subscribe to a random joke of the day uploaded onto their Strava activity
- Implemented activity triggers using a home-made webhook to detect when an activity is uploaded for users across the world.
- Utilized the Strava REST API and numerous other joke APIs in order to append joke to a users activity
- Created a frontend in React TypeScript and Bootstrap to allow users to subscribe.

Skills

Languages: Assembly (MIPS), C, C#, C++, CSS, HTML, Java, JavaScript, MATLAB, OCaml, Python, Ruby, Rust, SQL, TypeScript

Developer Tools: Confluence, Docker, Git, Jenkins, Jira, Maven

Frameworks/Libraries: Bootstrap, Flask, JUnit, Matplotlib, Numpy, NodeJS, React, REST APIs, Servlets, Unity

Miscellaneous: Bash, cURL, Linux, Microsoft Office, Unix, Latex, Postman, Windows

Relevant Coursework

Computer Science: Advanced Data Structures, Algorithms, Compilers, Computer Networks, Computer Systems, Cryptography, Data Science, Discrete Structures, Object-Oriented Programming I+II, Organization of Programming Languages, Web Application Development w/ JavaScript

Mathematics: Advanced Calculus I, Calculus I-III, Linear Algebra, Number Theory, Partial Differential Equations, Probability Theory