Jason Keung

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EDUCATION

University of California, Berkeley **August 2018 - May 2022**

- B.A. in **Computer Science** **CS/Math GPA: 3.6**
- B.A. in **Applied Mathematics**, concentration in Computer Science
- Relevant Coursework: Software Engineering, Machine Learning, Artificial Intelligence, Optimization Models, Algorithms, Data Structures, Database Systems, Machine Structures, Probability and Random Processes, advanced upper division math classes

SKILLS

Languages and Tools: Python, Java, C++, C, HTML/CSS/JS, Git, Numpy/SciPy, Spark, Pandas, Bazel, Terraform
AWS Developer Tools: AWS CloudWatch Events, Lambda, EC2, Simple Storage Service (S3), Elastic MapReduce, Step Functions, Batch
Data Structures, Algorithms, Optimization

- Heuristic algorithms, advanced data structures, space/time complexity analysis, search algorithms over data structures and graphs
- Tree recursion, object oriented programming, functional programming
- Convex optimization, duality, quadratic and linear programs, support vector machines, singular value decomposition, least squares

Linux Environments, Git, Docker, SSH, Monorepo, Jira, Agile Development

PROFESSIONAL EXPERIENCE

Aurora | Software Engineer Intern May 2021 - August 2021

- Saved Aurora ~$**450,000**/**mo.** on developer cloud computing costs on a Developer Platform team
- Improved the virtual desktop website on AWS Lambda using Python and Terraform, **heavily using AWS** developer tools with boto3
- Stopped developer's instances after a default time period using AWS CloudWatch event rules and allowed for shutdown time extension
- Allowed developers to seamlessly switch between instance types using EBS volumes to save and mount user data to their machines
- Integrated Sentry to forward error messages to Slack and OpsGenie, allowing for close monitoring of the deployment of the new features
- Refactored entire codebase into reusable handler modules for AWS CloudWatch Events, security groups, EC2, Route53, and SSM

Amazon | Software Development Engineer Intern June 2020 - August 2020

- Machine Intelligence and Decision Analytics for Search - improved Amazon.com product search results with automated machine learning
- Built AWS Step Functions pipeline for Amazon search bar behavioral feature dataset expansion, handling **hundreds of millions of rows**
- Improved the daily runtime to process this dataset by **8 - 14x** using PySpark + AWS Elastic MapReduce, from ~**8 hrs to 35 min**
- Optimized memory and parallelism configurations for AWS Elastic MapReduce Spark job, saving cloud computing costs for the team
- Merged machine learning model output with the current dataset using AWS Lambda + S3, Python, a trained regressor, and Pandas

PROJECTS + EXTRACURRICULAR

Fansure | Contract Data Analyst/Consultant | *Data Science Society @ Berkeley* January 2021 - May 2021

- Categorized NBA and MLB articles into relevant teams for Fansure, a sports-betting startup providing insights at scale
- Created an NLP model using Pandas, article parsing, weighted counts, and SportRadar API data to output relevant teams from articles
- Wrote an automated Python CLI script to categorize 100+ hand-tagged articles and achieved **>95% accuracy** for NBA and MLB

SoFi | Contract Data Analyst/Consultant | *Data Science Society @ Berkeley* September 2020 - December 2020

- Performed competitive analysis on personal finance apps for SoFi, a financial technology unicorn company based in San Francisco
- Implemented transaction graph prototypes and recurring transaction prediction using Pandas DataFrames, Matplotlib, Bokeh
- Categorized **600,000+** transactions with a dictionary mapping and created an NLP model for rows with missing data using fuzzy matching

Computer Science Mentors | Senior Mentor for Discrete Math and Probability Theory September 2019 - May 2021

- Taught sections on graph theory, polynomial secret sharing, RSA encryption, and discrete/continuous probability; **overall rating: 4.849**
- Hosted weekly meetings to manage and advise Junior Mentors in teaching their own sections

UC Berkeley EECS Department | Academic Intern for two introductory CS courses January 2019 - August 2019

- Taught 20+ students object oriented programming, recursion, data structures/algorithms, and graph traversals in sections and office hours

Algebra Worksheet Generator | Java, Java Swing

- Designed algorithm to procedurally generate random six-problem worksheets of one-variable equations for personal use as a math tutor
- Implemented adding new students with an assigned difficulty, creating unique student worksheets, and inputting graded worksheet scores
- Saved student progress and adjusted the difficulty of future generated worksheets according to past student scores and difficulty