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: Machine Learning*, Artificial Intelligence, Optimization Models, Algorithms, Data Structures, Machine Structures, Probability and Random Processes, Real Analysis*, Numerical Analysis, Discrete Math and Probability Theory, Abstract Algebra, Linear Algebra, Multivariable Calculus   ** - Planned for Spring 2021*

PROFESSIONAL EXPERIENCE

SoFi | Contract Data Analyst/Consultant   September 2020 - Present
- Perform competitive analysis on personal finance apps for SoFi, a financial technology unicorn company based in San Francisco
- Implement prototypes and recurring transaction prediction using Pandas DataFrames and NumPy and deck weekly progress

Amazon | Software Development Engineer Intern   June 2020 - August 2020
- Machine Intelligence and Decision Analytics for Search - **first SDE intern** in a state of the art machine learning team founded in Q4 2018
- Built AWS Step Functions pipeline for Amazon search bar behavioral feature dataset expansion, handling **hundreds of millions of rows**
- Improved runtime of sparse matrix creation of this dataset by **8 - 14x** using PySpark + AWS Elastic MapReduce, from ~**8 hrs to 35 min**
- Experimented with EMR cluster configuration to optimize memory and parallelism for Spark job to avoid having to use a larger machine
- Adapted AWS Lambda Python function to also get the latest frequent search queries from AWS S3 to prioritize for dataset expansion
- Prepared a trained regressor to scale inference outputs to appropriate scores and augmented the current dataset with tail/missing entries
- Created score regressor training set and wrote Python scripts to merge pipeline output and augment current behavioral feature dataset
- Presented to my team and Amazon Search, describing global customer impact with more relevant products and next steps for production

Computer Science Mentors | Senior Mentor for Discrete Math and Probability Theory   September 2019 - Present
- Teach sections on graph theory, polynomial secret sharing, RSA encryption, and discrete/continuous probability; **overall rating: 4.849**
- Host weekly meetings to manage and advise Junior Mentors in teaching their own sections

UC Berkeley EECS Department | Academic Intern for CS 61A, 61B   January 2019 - August 2019
- Taught 20+ students object oriented programming, recursion, data structures/algorithms, and graph traversals in sections and office hours

PROJECTS

Chess Knight's Tour Algorithm Demonstration | Java, Java Swing
- Wrote a Knight's Tour heuristic-based algorithm using Warnsdorff's rule and shows a knight piece visiting all 64 squares of the board
- Used heuristic to prioritize square with least the degree among 8 choices, moves per second control and a display of the chess board

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

Feedback Form | React.js, Bootstrap, HTML/CSS/Javascript
- Constructed fields with form validation using regex and a live character counter controlled component; makes POST request to a url
- Built to learn React and improve front-end skills by implementing a widely common feature of modern websites: a feedback form!

SKILLS

AWS Developer Tools: Amazon Simple Storage Service (S3), Elastic MapReduce, Lambda, Step Functions/State Machines, Batch
Big Data/Distributed Computing: Apache Spark/PySpark Resilient Distributed Datasets/Dataframes, Hadoop DFS, Sparse Matrices
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
UI Development: React.js, Bootstrap, Materialize, HTML/CSS/Javascript, Java Swing library
Python, Java, C++, C, Linux/Unix Environments, Git Version Control, Docker/Package Management, SSH