Barnett Yang

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EDUCATION

UNIVERSITY OF CALIFORNIA: BERKELEY
BA in Computer Science and Applied Mathematics
May 2024 | Berkeley, CA
Cum. GPA: 4.0 / 4.0

SOUTH PASADENA HS
June 2020 | South Pasadena, CA
Cum. GPA: 4.0 / 4.0
National Merit Finalist
National AP Scholar with Distinction
$10,000 Oneonta Scholarship Recipient
Southern California Junior Bach Festival Gold Medalist
Concertmaster: SPHS and Pasadena Youth Symphony Orchestras
President: SPHS Academic Decathlon
Vice President: SPHS Math Club

COURSEWORK

Data Structures and Algorithms
Discrete Mathematics and Probability Theory
Linear Algebra
Differential Equations
Multivariable Calculus
Number Theory
Structure and Interpretation of Computer Programs

SKILLS

PROGRAMMING LANGUAGES
Java • Python • C • Javascript • CSS
HTML • LaTeX • SQL

LIBRARIES AND FRAMEWORKS
Data Analysis
NumPy • Pandas • Keras • MatPlotLib
Sklearn • Tensorflow • Jupyter Notebook
Web Development
Node.js • Django • Flask • Bootstrap

SOFTWARE ENGINEERING
Quality Assurance • Github and Git Workflow
Lead Generation • Web Research
APIs and APMs

SOFT SKILLS
Mandarin Chinese • Communication
Initiative • Leadership • Determination
Critical and Quantitative Thinking

PUBLICATIONS

Yang B. Impacts of the COVID-19 Pandemic on the American Socioeconomic Academic Achievement Gap Through the Perspective of Race, Income, Unemployment, and Poverty. *Towards Data Science*. 2020.

EXPERIENCE

UC BERKELEY URSATECH | Data Analyst
Sep 2020 – Present | Berkeley, CA
- Investigated the socioeconomic factors influencing student success and development and the possible effects of the COVID-19 pandemic on the racial achievement gap.
- Visualized, modeled, and analyzed data from government studies using data analysis libraries in Python (Pandas, NumPy, Matplotlib, Sklearn, Keras, Tensorflow, etc.).

BERKELEY IEEE | Full-Stack Developer
Sep 2020 – Present | Berkeley, CA
- Developed a web drawing game inspired by Skribbl.io with 50-100 players so far.
- Created the design document, configured debugging directory settings, developed overall Javascript functionalities and websockets with Node.js, integrated and engineered backend systems, and created the chat and drawing board.

PHOTON COMMERCE | Software Engineer Intern
Nov 2020 - Jan 2021 | San Francisco (Remote), CA
- Developed and deployed Python web applications with API and APM integrations (New Relic, Google APIs, etc.). Documented web APIs. Performed quality assurance.
- Developed PDF parsing algorithms using regular expressions and OCR software.

ANAVIA JEWELRY AND GIFTS | Software Engineer Intern
Jul 2019 – Dec 2020 | City of Industry, CA
- Assisted in lead generation and web research by developing software to scrape meaningful web data and automate conversion to Microsoft Excel.
- Generated a cumulative total of 100,000+ line items from publicly available online directories, improving advertising efficiency and data accuracy.

PROFESSIONAL TUTOR | Self-Employed
Jan 2017 – Present
- Tutored 50+ middle and high school students in mathematics and chemistry. Improved student performance at school by up to 2 whole letter grades.
- Partnered with the UC Berkeley Public Service Sector to provide free weekly tutoring sections in math, computer science, and studying strategies at King Middle School.

PROJECTS

URSATECH
A data analysis project analyzing the links between the economic effects and racial disparities of the COVID-19 pandemic, student socioeconomic status, and the racial achievement gap. Analyses and visualizations were done in Python using data science libraries (e.g. Pandas, NumPy, Matplotlib, Sklearn, Keras, etc.), and the findings of the study were compiled into a research report and published on ***Towards Data Science***. The source code and relevant documentation can be found on Github.

PATHFINDING AND SORTING VISUALIZERS
My personal portfolio hosts pathfinding and sorting visualizers created using Node.js, Bootstrap, and Javascript. The pathfinding visualizer features Dijkstra's, A*, bidirectional, greedy, BFS, and DFS algorithms. The visualizer is interactive, allowing the user to add walls and weighted nodes and utilize a random maze generator. The sorting visualizer features six comparison-based sorts (selection, bubble, heap, merge, insertion, and quick sort) and two radix sorts (LSD and MSD radix sorts).

BEARMAPS
An interactive web mapping application of Berkeley capable of giving and plotting detailed routing instructions. The project was developed with an emphasis on data structures and algorithms. Tries are used to autocomplete search queries, A* is used for direction routing, and rastering is used to generate the map interface.

AWARDS

2019 Twice American Invitational Mathematics Examination Qualifier
2018 National Chemistry Olympiad Qualifier