

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

Relevant Coursework:

Data Structures and Algorithms

Machine Structures

Discrete Mathematics and Probability Theory

Multivariable Calculus

Linear Algebra

Differential Equations

Real Analysis

Abstract Algebra

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

SKILLS

PROGRAMMING LANGUAGES

Python • Java • JavaScript • C • HTML

CSS • \LaTeX • SQL • RISC-V

LIBRARIES AND FRAMEWORKS

Data Analysis

Pandas • Matplotlib/Seaborn • NumPy

Sklearn • Tensorflow • Keras

Web Development

Node.js • Bootstrap • Express • EJS • React

MongoDB/Mongoose • Flask • Django

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.

AWARDS

Twice American Invitational Mathematics Examination Qualifier (2019)

National Chemistry Olympiad Qualifier (2018)

EXPERIENCE

BERKELEY PLEXTECH | Project Manager

Feb 2021 - Present | Berkeley, CA

- Managed and coordinated the development of back-end routes, database models, and machine learning models for the AI-powered online education platform ScholarHub.
- Organized the overall documentation for back-end CRUD routes and project specifications, integrated machine learning models and Google/Zoom APIs, and oversaw code reviews and system-wide MERN stack integrations.

BERKELEY DATAGOOD | Data Analyst

Feb 2021 - Present | Berkeley, CA

- Currently working with the SF-based nonprofit ViviendasLeón to alleviate poverty in Nicaragua and Guatemala by analyzing data from rural family farms.
- Compiled machine learning, multiclass models to predict optimal crops and pesticide recommendations based on users' conditions, presented the model through a web API.

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.

BERKELEY IEEE | Full-Stack Developer

Sep 2020 - Jan 2021 | 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.

ANAVIA JEWELRY AND GIFTS | Software Engineer Intern

Jul 2019 - Dec 2020 | City of Industry, CA

- Created software to automate lead generation by scraping web data and converting to Microsoft Excel and CSV formats, thus removing the previous manual workflow.
- Developed algorithms to verify the correctness of company SKU and invoices.

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 letter grades.
- Provided free weekly sections in computer science and academic workshops for students at UC Berkeley as a UC Berkeley Computer Science Mentors junior mentor.

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 achievement gap. Analyses, visualizations, and modeling of Bureau of Labor Statistics and High School Longitudinal Study data were done in Python (e.g. Matplotlib, Pandas, etc.) and the findings of the study were compiled into a research report and published on *Towards Data Science*.

PATHFINDING AND SORTING VISUALIZERS

Online 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 (e.g. quicksort, mergesort, etc.) and two radix sorts (MSD and LSD radix sorts).

BEARMAPS

An interactive web mapping application of Berkeley, California 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.