

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

API and APM design • Quality Assurance

Lead Generation • Github and Git Workflow

Web Research

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

National Chemistry Olympiad Qualifier

National Merit Finalist

EXPERIENCE

BERKELEY PLEXTECH | Project Manager

Feb 2021 - Present | Berkeley, CA

- Managed the creation of back-end routes, set up MERN development frameworks and database models, and led project ideation for the AI-powered education platform ScholarHub's chat and Gather features with planned use at major institutions.
- Organized the API documentation and project specifications. Oversaw code reviews and merges to cleanly integrate system-wide software into the existing code base.

BERKELEY DATAGOOD | Data Analyst

Feb 2021 - Present | Berkeley, CA

- Executed data analysis and modeling using Python for the non-profit VivriendasLeon.
- Performed feature engineering for and compiled machine learning, multiclass models to predict optimal crop recommendations, thereby informing rural Nicaraguan and Guatemalan families' crop selections and farming practices through a web API.

PHOTON COMMERCE | Software Engineer Intern

Nov 2020 - Jan 2021 | San Francisco (Remote), CA

- Deployed Python web applications with API integrations. Used regular expressions and OCR software to improve the accuracy of existing invoice parsing algorithms.
- Documented web APIs and performed quality assurance.

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 CSV/Microsoft Excel formats, and developed additional algorithms to verify the correctness of company SKU and invoices, thus removing the previous manual workflow.

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

PATHFINDING AND SORTING VISUALIZERS

Online pathfinding and sorting visualizers created using Node.js. The pathfinding visualizer features Dijkstra's, A*, bidirectional, greedy, BFS, and DFS algorithms. The visualizer is interactive, allowing the user to add patterns of 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).

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*.

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.