

Barnett Yang

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EDUCATION

University of California, Berkeley

B.A. Computer Science and Mathematics

Expected: May 2024

GPA: 4.0/4.0

Relevant Coursework

- Computer Science:** Neural Networks and Deep Learning, Artificial Intelligence, Efficient Algorithms and Intractable Problems, Data Structures, Computer Security, Machine Structures, Foundations of Data Science, Information Devices and Systems
- Mathematics:** Discrete Mathematics and Probability Theory, Multivariable Calculus, Linear Algebra, Differential Equations, Real Analysis, Mathematical Economics

TECHNICAL SKILLS

Languages: Python, Java, C, Go, SQL, JavaScript, HTML/CSS, LaTeX, RISC-V

Data Science/Machine Learning: Pandas, Matplotlib/Seaborn, NumPy, Scikit-learn, Bayes Server, Tensorflow

Web Development: Node.js, Express, React, MongoDB, Bootstrap, EJS, Heroku, General REST API Development

Software Engineering: Git, Postman, VS Code, IntelliJ, PyCharm, Figma, Notion

WORK AND LEADERSHIP EXPERIENCE

Amazon

Software Development Engineer Intern – OPS Organization

San Francisco, CA

Starting May 2022

Sandia National Laboratories

Math Analysis and Decision Science R&D Intern

Albuquerque, NM

May 2021 - Present

- Investigated novel techniques in feature selection, variable discretization, and structural learning for Bayesian network training and development, improving statistical robustness metrics by over 15% on imbalanced red-team cybersecurity datasets.
- Constructed a Java to Python machine learning extension library to streamline Bayesian network creation and testing pipelines, reducing the prior manual workflow by 90% and accelerating machine learning development for corporate network behavioral and anomaly detection and community event recognition, with applications and use in multiple labs/projects at Sandia.
- First-authored publication currently under review for WCCI/IJCNN 2022 presenting applications of Bayesian networks and their relevant methodologies, best practices, and heuristics in cyber-attack detection.

UC Berkeley PlexTech

External Vice President

Berkeley, CA

December 2021 - Present

- Reformed semester recruitment processes of over 100 applicants via detailed recruitment timelines and member accountability measures, and decreased deliberation man-hours by over 50% through the creation of objective score-based assessment tools.
- Led planning of inter-organization networking and publicity events, including speaker events by LinkedIn and Prove managers.

Project Manager – Tassel and Scholarhub

February 2021 - December 2021

- Coordinated the creation of back-end routes, set up MERN development frameworks and database models, and led project ideation for ScholarHub Gather to create a sustainable online education platform API currently being piloted at UC Berkeley.
- Established project scope and API designs with startup CEOs, formulated developer onboarding and agile development sprints.

Anavia Jewelry and Gifts

Software Development Engineer Intern

City of Industry, CA

July 2019 – December 2020

- Created web scraping pipelines to automate lead generation, producing 100,000+ datapoints and improving quality of data and advertising efficiency by 80%.
- Developed algorithms to verify the correctness of company invoices and inventories, thus removing the previous manual workflow and informing marketing strategies.

PROJECTS, PUBLICATIONS, AND AWARDS

Pathfinding and Sorting Visualizers

User-interactive Node.js teaching aid for Dijkstra's, A*, and bidirectional pathfinding algorithms and comparison and radix sorting algorithms. The pathfinder includes a recursive division maze generator and functionality to add wall and weighted nodes.

COVID-19 Data Analysis Exercise

Data analysis study analyzing the economic effects of the COVID-19 pandemic on the racial achievement gap using BLS and HSLs data. Findings were compiled into a research report and published on Towards Data Science Editors' Picks with nearly 2000 views.

Yang, B., Hoffman, M., Brown, N.: Developing Bayesian Network Capabilities to Robustly Detect Cybersecurity Intrusions. Sandia National Laboratories, 2021. – Submitted for review: WCCI/IJCNN 2022

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.

Twice American Invitational Mathematics Examination (AIME) Qualifier