

Vinay Bhaip

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github.com/vbhaip

EDUCATION

- **University of Virginia**

Charlottesville, VA

Computer Science, Mathematics; GPA: 4.00

Bachelor's: May 2023; Master's: May 2024

- **Activities:** Echols Scholar (Top 5% in college), Forge, Jefferson Debate Society, Solar Car Team, Open Data Project.
- **Relevant Coursework:** Data Structures, Algorithms, Artificial Intelligence, Algorithmic Economics, Theory of Computation, Data Visualization, Software Development, Probability, Stochastic Processes, Linear Algebra.

- **Thomas Jefferson High School for Science and Technology**

Alexandria, VA

Computer Systems Research; GPA: 4.5

Sep 2016 – Jun 2020

EXPERIENCE

- **Citadel Securities**

New York City, NY

Software Engineer Intern

Jun 2022 - Present

- **Chartbeat**

New York City, NY

Software Engineer Intern

Jun 2021 - Aug 2021

- **Data Warehouse Migration:** Evaluated Redshift, BigQuery, and Snowflake to consolidate data warehouse reducing annual costs by more than 50%, optimizing rollup queries and migrating historical data.
- **Data Pipeline Modernization:** Rebuilt backend pipeline for core product to send real-time raw data to clients by processing and unloading Snowflake data to S3 every minute.

- **Howard Hughes Medical Institute**

Ashburn, VA

Computational Biology Intern; Machine Learning Intern

Jun 2019 - Aug 2020

- **Behavior Analysis:** Identified decision-making regions of the fly brain, measured by a ~84% accurate novel ensemble machine learning model, using computer vision to analyze results. Second place in Virginia Science Fair.
- **Computational Protein Synthesis:** Correlated possible calcium indicators of neural activity to likelihood of success, measured by Spearman's ρ of ~0.7, by developing transformer machine learning model.

- **Capitol Canary (Phone2Action)**

Arlington, VA

Software Engineer Intern

Jun 2018 - Aug 2018

- **Facebook Messenger Bot:** Expanded on award-winning hackathon project, developing a chatbot to connect users to grassroots campaigns using natural language processing. Released first-ever advocacy chatbot to clients.

ACCOMPLISHMENTS

- **HackNY Fellow:** Joined community of fellows (<1% acceptance rate) to learn about NYC startup ecosystem and engineered real-time dashboard for OpenAQ, a non-profit democratizing air quality monitoring.
- **UVA Hackathon:** Built video lecture summarizer ([link](#)) using NLP, winning best educational hack.
- **Stanford TreeHacks:** Developed machine learning powered posture correction system, winning grandprize in healthcare category at hackathon with roughly 2000 participants.
- **Forge Advanced Software Engineering Course:** Designed, built, and taught a 10 week advanced software development course around Flask from scratch to students, ranging from peers to full-time software engineers.
- **Solar Car Telemetry Team Lead:** Led team to architect and construct pipeline to ingest and visualize live data from solar car, contributing to UVA's first successful race in over 20 years.

PROJECTS

- **St. Mary's County Air Quality Dashboard:** A county-wide dashboard showing live and historical air quality data, built with React and D3. Collaborated with teachers to integrate features to get raw data for lesson plans.
- **Ranked Choice Voting Visual Exploration:** An exploratory data visualization built with D3 simulating political elections based off real ranked choice voting results from elections.
- **HelioHex:** A highly-configurable lighting piece that syncs to Spotify with a custom web-app controller. Uses Flask as an API on Raspberry Pi to control lights, leveraging parallel processes in Python.

PROGRAMMING

- **Languages:** Python, C++, Java, SQL, Javascript, HTML, CSS.
- **Libraries:** React, D3.js, Keras, Scikit-learn, TensorFlow, NumPy, OpenCV.
- **Technologies:** Linux, Bash, Git, AWS (Redshift + S3), Flask, Firebase, Heroku.