Vinay Bhaip

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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, Ektaal A Capella.
    - **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

- **Jane Street** — New York City, NY
  Incoming Software Engineer Intern   *Jun 2023 - Aug 2023*

- **Citadel Securities** — New York City, NY
  Software Engineer Intern   *Jun 2022 - Aug 2022*

- **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 grand prize 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, developed 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.