

Vinay Bhaip

vbhaip01@gmail.com

vinaybhaip.com

github.com/vbhaip

EDUCATION

- **University of Oxford** Oxford, UK
Master's – Mathematics; Specializing in Network Sciences and Numerical Linear Algebra
Oct 2023 - Jun 2023
 - **Thesis:** Similarity and Percolation on Networks, advised by Renaud Lambiotte
- **University of Virginia** Charlottesville, VA
Bachelor's – Computer Science, Mathematics; GPA: 4.00
Aug 2020 - May 2023
 - **Activities:** Echols Scholar (Top 5% in college), Forge, Jefferson Debate Society, Solar Car Team, Ektaal A Capella.
 - **Relevant Coursework:** Algorithms, Computer Architecture, Operating Systems, Theory of Computation, Artificial Intelligence, Data Visualization, Algorithmic Economics, 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
Software Engineer
Sep 2024 - Present
- **Jane Street** New York City, NY
Software Engineer Intern
Jun 2023 - Aug 2023
 - **Research Infrastructure; International ETFs:** Research tools and custom trading applications.
- **Citadel Securities** New York City, NY
Software Engineer Intern
Jun 2022 - Aug 2022
 - **Options Market Making Team:** Architected real-time, low-latency pipeline to ingest external market data an order of magnitude faster than existing solution.
- **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 Amazon 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** 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 to students, ranging from peers to full-time software engineers, at a non-profit career accelerator.
- **Solar Car Telemetry Team Lead:** Led team to architect and construct pipeline to ingest and visualize live data from solar-powered car, contributing to UVA's first successful race in over 20 years.

ADDITIONAL 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 for an API on Raspberry Pi to control lights, leveraging parallel processing in Python.

PROGRAMMING

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