Vaishnavi Gupta

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EDUCATION

Cornell University
BS (Computer Science)
August 2019 - May 2023
GPA: 3.975

ORGANIZATIONS

Women In Computing at Cornell
Cornell Concert Commission
Rewriting The Code Fellow
The Hortus Form (Horticulture Club)

COURSEWORK

Algorithms
Honors OOP & Data Structures
Functional Programming
Honors Discrete Mathematics
Intro to Machine Learning
Computational Genetics
Linear Algebra
Multivariable Calculus
Differential Equations

SKILLS AND TECHNOLOGIES

Software Design + Data Science

Java | Python (including PyTorch) | C++ | OCaml | Kotlin

Web Development

Frontend and backend experience

JS/Typescript (React, Node.js) | HTML5 | CSS | MySQL

Graphic Design

Adobe Illustrator | InDesign

AWARDS

Dean's List: all semesters offered

ACM-ICPC for Schools Contest: 2nd place in the India ICPC qualifiers amongst 100 high school teams

3-time Indian National Olympiad in Informatics Finalist: Amongst the top 60 students in the country

EXPERIENCE

Cornell Design & Tech Initiative - *Backend Developer*
August 2020 – Present

› I work on flux ↗ , an app for assessing real-time traffic flow at locations on the Cornell campus. Implemented a model to accurately predict queue wait-times using swipe data, which improves through crowdsourced feedback.

› Regularly worked with Google Cloud functions and Firebase to handle API calls and NoSQL database population.

Cornell University - *Teaching Assistant*
August 2020 – Present

I lead a weekly recitation section, hold office hours and grade problem sets as a TA for **CS 4820 - Algorithms** and **CS 2802 - Honors Discrete Math**.

Buckler Lab, Cornell University - *Researcher*
June 2020 – Present

Working on writing a set of lightning fast genetic analysis tools in Kotlin and C, and using machine learning to predict haplotypes by optimally stitching fragmented DNA alignments.

All India Institute of Medical Sciences, India - *Developer*
January 2018 – July 2019

› Built an online learning platform ↗ to train medical students and doctors on optimal neonatal care practices; scaled up to 10,000+ users across India

› Implemented the platform from scratch, with features like interactive timed quizzes, webinars, and automatic certificate generation.

PROJECTS

PhyloML - Demo ↗ Source ↗

› A phylogenetic tree library in OCaml to parse DNA sequence files and generate most-likely evolutionary trees, demoed via a React frontend.

› Implemented various distance-measure and Bayesian inference Markov Chain Monte Carlo sampling algorithms. This involved using the Metropolis Hastings algorithm and implementing dynamic programming and heuristic based multiple sequence alignment.

› Wrote an XML lexer and parser from scratch to read in existing tree data.

Crunch - Source ↗

A fast command line tool written in C++ implementing various lossless file compression algorithms like LZW and Huffman Coding. This also involved designing bit-by-bit file reader and writer classes.

Critterworld

A 10,000 line+ Java game consisting of a world of programmable 'critters'. In the process, I wrote a server and implemented thread-safety to support concurrent API calls from multiple players, and wrote a parser to read in critter instruction files. The frontend was made using JavaFX.