

Vaishnavi Gupta

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[personal website](#) | [github](#) | [linkedin](#)

EDUCATION

Cornell University

BS (Computer Science)

August 2019 - May 2023

GPA: 3.960

ORGANIZATIONS

Women In Computing at Cornell
The Hortus Form (Horticulture Club)

COURSEWORK

Honors OOP & Data Structures
Functional Programming
Honors Discrete Mathematics
Algorithms
Intro to Machine Learning
Graphics
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

Javascript (React, Node.js)

HTML5 CSS MySQL PHP

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

Dean's List: all semesters offered

3-time Indian National Olympiad in

Informatics Finalist: Amongst the top 60 students in the country

AIME qualifier

EXPERIENCE

Cornell University - Teaching Assistant

August 2020 - Present

I lead a weekly problem-solving recitation section, hold office hours and grade problem sets as a TA for **CS 2802 - Discrete Math Honors**. I also hold office hours and grade as a consultant for **CS 2112 - Honors OOP**.

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.

All India Institute of Medical Sciences, Delhi, India -

Developer and Intern

January 2018 - July 2019

- › Built an [online learning platform](#) ↗ from scratch to train medical students and doctors on optimal neonatal care practices; PHP and MySQL used for backend
- › Scaled up nationwide, with 10,000+ users from India and the Maldives

Institute of Genomics and Integrative Biology, Delhi, India -

Research intern

March 2018 - June 2018

Implemented machine learning models using various classifiers (Naive Bayes, Random Forest) to predict the chemical reactivity of untested molecules for tuberculosis drug discovery programmes

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.