

Vaishnavi Gupta

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

EDUCATION

Cornell University, MS

Computer Science

August 2022 - May 2023

Cornell University, BA

Computer Science + Math

August 2019 - May 2022

GPA: 4.00, Summa Cum Laude

ORGANIZATIONS

Cornell Concert Commission

Hortus Form (Horticulture Club)

COURSEWORK

Graduate Algorithms

Large Scale Machine Learning

Compilers, Operating Systems

Graduate Network Theory

Hons. OOP & Data Structures

Hons. Discrete Mathematics

Computational Genetics

Probability, Hons. Real Analysis

Algebra, Linear Algebra

SKILLS AND TECHNOLOGIES

Software Design + ML

C++ Python (incl PyTorch)

Kotlin OCaml Java

Web Development

Frontend and backend experience

JS/Typescript (React, Node.js)

HTML5 CSS SQL

AWARDS

Compilers Bakeoff Winner:

Awarded the best compiler for CS 4120 as a team of 3

Cornell Prize for Teaching

Excellence: \$500 reward, given to 1 out of graduating class

Grace Hopper Full Funding

ACM-ICPC for High Schools:

2nd in the India qualifiers

Indian National Olympiad in

Informatics Finalist

EXPERIENCE

Meta AI - Software Engineer Intern

June 2022 - August 2022

- › Working on making vision transformers for video machine learning tasks more compute-efficient, while maintaining accuracy. Implemented adaptive token sampling modules from research papers in PyTorch, and incorporated them into workflows for downstream tasks like Reels understanding.
- › New trained models showed a 25% decrease in transformer inference time latency and flops, with a 10% final decrease in the production model.

Instagram - Software Engineer Intern

June 2021 - August 2021

- › Worked on infrastructure in the Instagram Suggested Users team, to increase efficiency and recommendation quality. Used C++ and Python, as well as SQL, Hive, and A/B testing frameworks for statistical analysis.
- › Optimizing cache refresh scheduling based on user activity prediction led to a 30% decrease in CPU cycles during peak hours, and an overall 10% decrease.

Cornell Design & Tech Initiative - Backend Developer

August 2020 - Present

- › I work on [CoursePlan](#) ↗, a website helping students plan coursework. Worked to set up requirements infrastructure using a bipartite matching algorithm.
- › Worked on [flux](#) ↗, an app assessing crowdedness at Cornell eateries. Implemented M/M/1 queue model to predict wait-times using swipe data.

Cornell University - Undergraduate Researcher

January 2021 - Present

- › As a member of [CUAI](#) ↗, I'm working on problems related to improving the performance of Graph Neural Networks on non-homophilous graph structures.
- › Also exploring online learning algorithms, advised by Prof. Robert Kleinberg.

Cornell University - Head Teaching Assistant

August 2020 - Present

I lead a weekly recitation section, handle the autograder, and help write review materials for **CS 4820 - Algorithms** and **CS 2802 - Hons. Discrete Math**.

PUBLICATIONS

- › Large Scale Learning on Non-Homophilous Graphs: New Benchmarks and Strong Simple Methods (*NeurIPS 2021*) [PDF](#) ↗
- › Non-Stochastic CDF Estimation Using Threshold Queries (*in submission*)

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 Bayesian inference MCMC sampling algorithms for heuristic based sequence alignment. Also wrote an XML lexer and parser.