

# Yamini Vibha Ananth

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## Education

**Columbia University** 3.80/4.0 2019- 2023  
School of Engineering & Applied Sciences  
B.S. in Applied Math, Minor in Computer Science

### Coursework

**Undergrad:** Data Structures, CS Theory, Sys Prog, Prob+Stats, Numerical Methods, Dynamical Systems, Complex Vars, Analysis+Optimization

**Grad:** AI, ML, NLP, DataViz, Numerical Methods for PDEs, Databases, Cloud Computing

### Awards

Dean's List (x4) - top **10%** semester GPA in engineering school

[Coca-Cola Scholar](#) - **1 of 150** selected from **90k** on the basis of academics, leadership, & service

## Skills

### Programming Languages

Python, Java, Bash, UNIX

### Data Science

Tensorflow/Keras, PyTorch, sk-learn, MySQL, PostgreSQL, Jupyter, Tableau

### Platforms and Services

GCP, Airflow, Dataflow, Beam, Terraform, Kafka

### Web Development + Architecture

LAMP - Linux, Apache, MySQL, Python/Flask

## Projects

### Fighting Bushfires with Drones | COMAP

Mathematical Contest in Modeling > [About](#) > 2020  
> Designed **optimization model** and **least-costs path model** based on Dijkstra's algorithm  
> Implemented using **Python & Jupyter**  
> Project was in **top 6%** of **10,000** submissions

### Options Pricing w/Black-Scholes > [About](#) > 2022

> Discretized B-S PDE to price European & American options, wrote **4 solvers** in **Python** and analyzed tradeoffs in runtime and accuracy  
> Implemented Monte-Carlo solver using **tensorflow-probability** decorator, reducing runtime **346x** vs. vanilla Python

## Experience

**Data Science Intern, hackNY Fellow** | Oden Technologies > [About](#) > Summer 2022

> Implemented and benchmarked novel **neural network** algorithm for changepoint detection using **tensorflow** for **time-series data**  
> Optimized lookup method in **Apache Beam Java** data streaming pipeline by reducing runtime by **60%**, saving **\$1.6k/mo**

**Computational Biology Intern** | MD Anderson > [About](#) > Summer 2021

> Used **Python**, **Bash** scripts, & **Jupyter** in a Neptune **AWS server** to develop an **ETL pipeline** for ingesting unstructured gene essentiality data  
> Mentored high school layman in **Python**

**Computational Science Intern** | O'Shaughnessy Lab > [About](#) > Summer 2020

> Developed automated **MATLAB** scripts for edge detection of simple pores, reduced **30min** manual workflow to **30secs** (**60x** faster)  
> Analyzed the identified edges in **R** with **Magick** and visualized results using **ImageJ**

## Teaching & Leadership

**Teaching Assistant** | Intro to Java, Discrete Math, ODE > [About](#) > 2021-Present

> Guided **300+ students** per class per semester  
> Taught & co-wrote **11** recitations, **6** coding assignments, and **2** exams per semester

**Data Scientist** | Columbia Data Product Initiative > [About](#) > 2021

> Developed stock prediction model based on sentiment analysis of news headlines scraped using **BeautifulSoup** with **NLTK**  
> Trained **LSTM** model across **1M+ rows/1k+ features**, performed **PCA**, improved performance by **36%** to **86% accuracy**

**Conference Director** | Columbia Society of Women Engineers > [About](#) > 2019-Present

> Led committee of 13 volunteers to organize event hosting **250+** NYC area high school girls  
> Increased budget **400%** by national grants  
> Led documentation efforts for repeatability