

# Vivek Yanamadula

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## Education

### Columbia University

New York City, New York

M.S. IN COMPUTER SCIENCE, MACHINE LEARNING TRACK. GPA: 3.8

Sept. 2023 - Dec. 2023

B.A. IN MATHEMATICS, CONCENTRATION IN COMPUTER SCIENCE. GPA: 3.979

Sept. 2019 - May. 2023

- *Honors*: Cum Laude, Dean's List (All Eligible Semesters), Ralph Mable Scholarship (2022, 2023)
- *Computer Science Coursework*: Intro to Quantum Computing, Intro to Cryptography, Number Theory and Cryptography, Malware Analysis & Reverse Engineering, Intro to Databases, Operating Systems, Computer Graphics, Machine Learning, Natural Language Processing, CS Theory, Advanced Programming, Fundamentals of Computer Systems, Data Structures in Java
- *Mathematics Coursework*: Algebraic Curves, Arithmetic Dynamics, Topology, Modern Algebra I/II, Modern Analysis I, Honors Mathematics A/B

### Course Assistant

New York City, New York

COMS W3261: COMPUTER SCIENCE THEORY (2021), COMS 4701: ARTIFICIAL INTELLIGENCE (2022, 2023)

Fall 2021, Fall 2022, Fall 2023

- Presented review sessions to help solidify material covered during the week, held weekly office hours to answer students' questions, managed an online discussion board for student questions, and graded assignments/exams

## Work Experience

### Amazon Web Services - Marketing Technology & Measurement

New York, New York

SOFTWARE ENGINEER

September 2024 - Present

- Worked on the development of marketing data tools in the Privacy & Identity Experiences team under Ranjith Zachariah
- Built out LLM powered moderation of AWS user profiles, screening for profanity and spam content in usernames and user bios
- Created a system to design and assign community badges to users which can be displayed on public facing AWS websites to highlight AWS related accomplishments
- Key Skills Used: TypeScript, React, GraphQL, AWS CDK, Code Review, Unit Testing

### Amazon Web Services - Worldwide Public Sector

Arlington, Virginia

INTERN

Summer 2022, Summer 2023

- Worked on the development of financial tools for the AWS WWPS Innovation Engineering team under Ray Caruso
- 2023: Built an external data harvester, search engine, and AI-enabled natural language analytics platform to track key AWS contract metrics, saving sales team users approx. 8 hrs/wk
- 2022: Designed and created a notification database and email service for a billing tool expected to save Amazon approx. \$7 BN annually
- Key Skills Used: Python, TypeScript, HTML/CSS, AWS CDK, OpenSearch, DynamoDB, QLDB, Code Review, Unit Testing

### Inspirit AI

New York City, New York (Remote)

INSTRUCTOR AND GUEST LECTURER

Summer 2021 - Fall 2021

- Taught three two-week summer courses of 15 high schoolers each on fundamentals of AI/ML and led practical coding projects
- Invited back to provide guest lectures in Fall 2021 to over 100 students on robustness in machine learning
- Key Skills Used: Python, Scikit-Learn, Teaching

### U.S. Department of Veterans Affairs

New York City, New York (Remote)

INTERN - INTEGRATED VALUE MODEL (IVM)

Summer 2021

- Independently created an approx. 98% accurate NLP recommendation system to automate inputting new directives into the IVM dataset
- Key Skills Used: Python, PyTorch, Pandas, Scikit-Learn, Project Design

## Research Experience

### Columbia Software Systems Lab

New York City, New York

UNDERGRADUATE RESEARCHER FOR COURSE CREDIT (ADVISOR: DR. RONGHUI GU)

Spring 2023 - Present

- "Bifrost: Topology-Aware Approximate Compilation of Variational Quantum Algorithms", technical paper accepted for publication in IEEE Quantum Computing and Engineering 2025 journal, presented at the American Physiological Society March Meeting
- Created a compiler to efficiently run quantum machine learning algorithms on NISQ quantum computers, utilizing noise adaptive techniques and searching over potential gate transformations for circuit simplification via approximation
- Key Skills Used: Python, Qiskit, SciPy, PennyLane, TorchQuantum, Quantum Computing

## Skills & Activities

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**Coding Skills**, TypeScript, Python, React, AWS, C, C++, Java, SQL, NoSQL (DynamoDB), MatLab, HTML/CSS/SCSS, PyTorch, Qiskit, Git, Vim, Bash

**Languages**, English (Native), Spanish (Advanced), German (Intermediate), Telugu (Basic)

**Other Affiliations**, CU Cyber, Columbia Social Entrepreneurship Club (Consultant), Columbia Undergraduate Mathematics Society, Columbia Poker Club, Columbia Bartending Agency, Phi Gamma Delta