

Hiba Altaf

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EDUCATION

Columbia University

Bachelor of Science in Computer Science

New York, NY

Expected May 2027

Cumulative GPA: 3.63/4.00

Relevant Coursework: Advanced Programming in C, Fundamentals of Computer Systems, Data Structures and Algorithms in Java, Linear Algebra, Multivariable Calculus

TECHNICAL SKILLS

Languages: Python, Java, SQL, C, C++, HTML, CSS, JavaScript, TypeScript

Software and Frameworks: Git, React.js, TensorFlow, Pandas, AWS services, Figma, APIs, Operating Systems, Agile

PROFESSIONAL EXPERIENCE

Amazon

May 2024 - August 2024

Software Development Intern

Seattle, WA

- Trained a Claude 3 Sonnet large language model to review the correctness of voice-friendly titles (VFT) for Amazon catalog items; performed prompt engineering and achieved a 75.68% accuracy.
- Processed around 20,000 catalog title records from an AWS S3 bucket, converted to JSON, and prepared for Bedrock Batch inference calls.
- Implemented a state machine to automate this inference process, integrating AWS Lambda, S3, DynamoDB, and Docker.

Trillium Trading

July 2023 - May 2024

Software Development Intern

Manhattan, NY

- Developed a trader learning platform using HTML, TypeScript, and React.js, enhancing functionality and user experience.
- Engineered a custom search engine that dynamically retrieves data from 1200 company pages through Confluence API.
- Designed 18 wireframes for website pages in Figma, ensuring UI consistency with the company's brand identity.

Con Edison

January 2023 - June 2023

Engineering Intern

Bronx, NY

- Performed data analysis by comparing gas valve information across company mapping and record platforms through Excel.
- Corrected about 10% of gas valve categorizations and migrated them onto the Geographic Info System (GIS).

RESEARCH EXPERIENCE

Columbia University Electrical Engineering Department

August 2024 - Present

Research Assistant

Manhattan, NY

- Collaborate with Electrical Engineering Professor Tanvir Ahmed Khan and Microsoft researcher Dr. Angélica Moreira.
- Train a large language model to conduct static code analysis and resolve false sharing memory bugs in C/C++ code in order to reduce cache invalidations and boost runtime performance.

EXTRACURRICULAR EXPERIENCE

Columbia Space Initiative

October 2023 – Current

Programming Lead

Manhattan, NY

- Led the programming team in the NASA Micro-g Neutral Buoyancy Experiment to create an object detection system for Orion.
- Created a balanced training dataset from scratch; fine-tuned the YOLOv8 object detection deep learning model through Roboflow with 91% accuracy; streamed live data from GoPro to Jetson Nano via ethernet connection and deployed model for inferencing.

AWARDS & HONORS

National Cyber Scholar

May 2023

- A \$3000 scholarship awarded to the top 7% of participants in CyberStart America, a cybersecurity training platform

Amazon Future Engineer

April 2023

- 1 of 400 students nationwide to receive a \$40,000 scholarship & a paid SWE Internship at Amazon in the Summer of 2024

PROJECTS

Web Server - Developed a multithreaded HTTP web server in C to handle static file requests and integrate with an external MDB lookup service, efficiently processing dynamic queries and displaying results through a clean web interface.

Brain Teaser - Designed a Java GUI application using Swing and AWT, featuring three games: an arithmetic quiz with randomly generated math problems, a memory game with card pair matching, and a randomized crossword puzzle generator.