

Arjun Aggarwal

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Education

University of Maryland

Expected: May 2025

B.S. Computer Science (Honors) & Mathematics | GPA: 3.8

College Park, MD

- **Honors:** Dean's List (all semesters), OMSE Academic Excellence Award (Spring 2022)
- **Relevant Courses:** Algorithms I & II, Object-Oriented Programming I & II, Discrete Structures, Introduction to Data Science*, Computer Systems, Linear Algebra, Introduction to Probability Theory, Theory and Methods of Statistics* (*** are current**)

Experience

Bank of America

June 2023 – August 2023

Software Engineering Intern

Jersey City, NJ

- Completed 3 projects assisting effort to transition BofA batch risk testing to stream processing using Apache Kafka.
- Automated Alteryx workflows using Python, SQL, and Apache Hive, reducing run time by 85% for 5000+ risk/compliance tests.
- Integrated workflow tools with Bitbucket API, reducing workflow check-in time from 30+ minutes to seconds for 750+ analysts.
- Developed test detail microservice using Spring Boot, OpenShift, and Java 8, reducing legacy code usage by 15%.

Capital One

January 2023 – April 2023

Software Engineering Intern

College Park, MD

- Leveraged Apache Spark to prepare pipeline for querying transaction graph (900M edges), enabling faster risk detection.
- Reorganized graph data into Spark GraphFrames, leading to 6x speed improvement (median) in node neighbor queries.
- Conducted 80 cloud-based trials with varying RAM/storage metrics to validate results; presented metrics to stakeholders.
- Collaborated in agile manner to develop new features, participating in 100% of scrum meetings.

University of Maryland | Quantum Machine Learning Lab

May 2022 – July 2022

Research Intern

College Park, MD

- Trained signal classifier for CERN Large Hadron Collider data to detect noise with 87% accuracy (4% over old model).
- Optimized performance by plotting metrics via Matplotlib and tuning hyperparameters (e.g. learning rate and batch size).
- Improved portability of TensorFlow-based model by hosting it in a [Jupyter Notebook](#), expanding usage to the whole team.

Glimmr

August 2021 – February 2022

Junior Software Engineer

Charlottesville, VA (Remote)

- Improved test coverage of web app by 30% with 35+ Jest unit/integration tests and enforced code standards via Prettier.
- Contributed to complex [web application](#), applying agile practices (code reviews, git branching, etc.) to 1K+ lines of code.
- Redesigned 10+ web components using JavaScript, React, and SASS to match Figma wires.

Projects

Unix-like Command Line Shell in C | C, Makefile

- Developed a basic Unix-like command line shell in C that handles simple boolean operations, pipes, and file redirection.
- Tokenizes command line input, converts tokens into a tree data structure, and traverses the tree to execute.
- Created a makefile to expedite the executable building process by establishing various dependency rules.

Paraphrase-based Text Search Web App | Python, Flask, HTML/CSS, TensorFlow

- Developed a web app that searches through text with a paraphrased search key at BitCamp, a UMD hackathon.
- Identified semantically similar sentences by running user input through an open-source semantic analysis model.
- Created front-end using Python and Jinja2 templates to display results accessed via Flask endpoints.

YOLOv3-based Vehicle Parking Pass Detector | Python, YOLOv3, Flask, HTML/CSS

- Trained YOLOv3 Object Detection model capable of detecting vehicle parking passes with 96% accuracy.
- Integrated Google Cloud Vision API optical character recognition system to detect pass identification numbers.
- Designed a real-time visualization of a parking lot for school administration using Flask endpoints and an HTML/CSS front-end.

Skills

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

Other: Git, React, Flask, JUnit, Docker, Linux, Apache Spark