Arjun Aggarwal

+1 (571) 286-1141 | arjunaggarwal173@gmail.com | linkedin.com/in/arjunaggarwal1/ | github.com/arjunaggarwal03

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*
- 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
Undergraduate 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