

# ARNAV AGGARWAL

☎ 240-921-8896 | ✉ arnav.aggarwal790@gmail.com | 🔗 LinkedIn | 🐙 GitHub

## EDUCATION

### University of Maryland, College Park

Expected Graduation: May 2026

*Bachelor of Science in Computer Science, Minor in Mathematics; GPA: 3.91*

**Relevant coursework:** Object Oriented Programming, Data Structures & Algorithms, Computer Systems, Discrete Structures, Organization of Programming Languages, Advanced Algorithms, Data Science, Web Dev with Javascript, Machine Learning, Compilers

**Certifications:** [CodePath](#) Advanced Technical Interview Prep (June 2024 - Aug 2024)

## EXPERIENCE

### Adobe

June 2025 – Aug 2025

*Software Engineering Intern | Kubernetes, Java, Spring Boot, FastAPI, Grafana, Jira*

*Lehi, Utah*

- Developed a Java Spring Boot MCP server to make an AI workflow for migrating projects from Adobe Analytics to Customer Journey Analytics, enabling batch operations and reducing end-to-end migration time by 60%
- Migrated a caption paraphraser from FLAN-T5 to OpenAI, improving conciseness by 2× and reducing response time by 22%
- Refactored the main backend service by reducing 6500 lines of code and authored 3 versions of the system architecture, driving adoption of a unified microservices architecture resolving conflicts across multiple stakeholders
- Led operational readiness by building observability dashboards with Grafana & Prometheus tracking 6 key SLIs, setting up severity-based alerting to Slack, ServiceNow, email and implementing auth & rate-limiting for prod
- Wrote a load-testing script using k6 and a centralized Node/Express report viewer, deploying both in K8s

### App Development Club, University of Maryland

Sep 2024 – May 2025

*Technical Lead | React Native, Typescript, Expo, PostgreSQL, WebRTC, Google Gemini*

*College Park, Maryland*

- Led a team of 13 in a Scrum-based agile environment owning product and system design to build an iOS app deployed on the App Store, providing essential services to veterans & enabling [Warrior's Legacy Care](#) to raise \$5M in funding
- Developed and dockerized a Flask backend and set up a CI/CD pipeline to deploy it on AWS EC2 with PostgreSQL on AWS RDS
- Implemented real-time messaging from scratch using Socket.IO, integrating iOS push notifications and video calling using WebRTC
- Implemented a resume upload & analysis pipeline with AI-based job recommendations & feedback on veterans' resumes

### HSR.health

June 2024 – Aug 2024

*Software Engineering Intern | Python, Docker, DevOps, ArcGIS, Data Analysis*

*Rockville, Maryland*

- Automated extraction, cleaning, & aggregation of 635+ Indian census health/social data tables with BeautifulSoup, Selenium, & Pandas; Used GeoPandas for geocoding this data, increasing geo-spatial data alignment by 52%
- Developed Python functions to calculate health risk indices using Jenks natural breaks for data clustering, & deployed them in a cloud data pipeline built with AWS Lambda, EventBridge, ECR, S3 & the serverless framework
- Integrated a CI/CD pipeline using GitHub actions to dockerize the lambda functions & push docker image to ECR

### Department of Computer Science, University of Maryland

Aug 2023 – Present

*Teaching Assistant: Discrete Structures and Object-Oriented Programming*

*College Park, Maryland*

- Facilitated learning for 700+ students by conducting regular office hours and leading review sessions
- Graded quizzes, exams, projects and taught key concepts like data structures, algorithms, inheritance, recursion, multi-threading, propositional logic, proof techniques, number/set theory, probability theory and Junit testing

## PROJECTS

### SpIab | FastAPI, React, Socket.IO, Firebase, Kubernetes, Docker

[Github](#) | [Demo](#) | [App](#)

- Developed a mobile-first full-stack web app as a low-friction solution for collaboratively splitting tabs with friends in real time
- Built a receipt parsing pipeline with a fine-tuned Hugging Face Donut Transformer & benchmarked it against alternative models
- Engineered a RESTful FastAPI backend with Docker and deployed it on Kubernetes (k3s) with Traefik ingress, while hosting the frontend on Firebase, setting up CI/CD pipelines for both via GitHub Actions secured with Tailscale
- Integrated real-time tab updates and online status tracking with WebSockets and Firestore for multi-user collaboration

### WebAssist | React, Flask, Javascript, Langchain, Tailwind, Regex

[Github](#) | [Demo](#)

### 1st place at 2024 Text AI Jam Hackathon by FluensTech (Team of 2)

- Built an AI-powered chrome extension featuring content-summarization, interactive flashcard generation, and a chatbot all dynamically working with the webpage's content along with a multi-highlight functionality
- Implemented a Flask backend API integrating a RAG model using OpenAI for generating embeddings stored in FAISS vector database, alongside a LangChain summarization chain to overcome the LLM's context window limits
- Developed a React front-end incorporating text-to-speech functionality while leveraging Chrome Runtime API to connect content script to client-side and Chrome Storage API to preserve extension's state between user sessions

## SKILLS

**Languages:** Python, JavaScript/TypeScript, HTML/CSS, Java, Ocaml, Matlab, C, Rust, SQL, Assembly (MIPS R2000)

**Technologies/Tools:** Kubernetes, Docker, Spring Boot, FastAPI, Flask, Node/Express, React, React Native, Expo, PostgreSQL, MongoDB, AWS, Grafana, Prometheus, Socket.IO, WebRTC, LangChain, Pandas, NumPy, Tailwind, Three.js, Git, Bash

**Methodologies:** DevOps (CI/CD, IaC), Cloud Computing, Agile (Scrum, Kanban), Version Control