

Aman Srivastava

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EDUCATION

University of Maryland - College Park

August 2023 - May 2027

Bachelor of Science | Major in Computer Science | Minor in Philosophy

Dean's List

Relevant Coursework: Advanced Data Structures, Algorithms, OOP (Java), Discrete Structures, Programming Languages, Computer Systems, Data Science, Operating Systems, Computer and Network Security, Intro to AI

EXPERIENCE

IBM

May 2026 - August 2026

Z Infrastructure Solutions Architect Intern

- Architected and deployed an end-to-end RAG knowledge platform, serving as a technical demo for a 40–60 person C-suite sales event with clients; ingests 5 IBM Redbooks (~1,000+ pages) split into 762 chunks, w/ hybrid retrieval over pgvector, cosine similarity search, score-based reranking, and local LLM inference via Qwen/Ollama on LinuxONE
- Reduced truncated LLM outputs by 75% by engineering a multi-stage retrieval pipeline with finish-state validation, same-context continuation, and fallback regeneration, hardening output reliability for enterprise LLM inference
- Designed and owned end-to-end a hands-on "New to Z" onboarding demo for 20–30 enterprise engineers, building a multi-section Next.js demo site and 3–4 shell scripts walking participants through SSH provisioning, MQ installation, queue construction, and 3 send/receive experiments on a LinuxONE VM

Fintech Global Center

June 2025 - August 2025

Software Engineering Intern

- Reduced portfolio allocation decision time and enforced compliance programmatically by building a bond portfolio optimizer using SciPy Differential Evolution — maximizing yield across live portfolios under budget, duration, and credit constraints.
- Automated end-to-end portfolio audit reporting across market value, yield, DV01, and rating metrics, cutting manual review time by 40% and replacing an ad-hoc validation process with a structured, repeatable pipeline.

Fintech Global Center

June 2024 - August 2024

Software Engineering Intern

- Reduced fixed-income pricing error by 15% against industry benchmark models by developing a Python yield simulator, giving analysts a faster alternative to manual curve fitting.
- Automated market reversal signal detection by building a backtesting pipeline integrating TensorFlow, NumPy, and Matplotlib, surfacing RSI and moving average indicators and delivering visualizations directly into analyst review workflows.

PROJECTS

Bias Lens | [Repo](#)

- Built a full-stack Next.js + TypeScript application for real-time media bias detection, integrating AI and NLP to identify, score, and annotate biased language in articles
- Implemented a hybrid analysis pipeline combining OpenAI models with in-house NLP (sentiment analysis, NER) and embeddings for semantic similarity and multi-source comparison
- Developed scalable backend infrastructure with API routes, rate limiting, caching, and Supabase integration for persistent storage and efficient data retrieval

Serverless Financial Data Pipeline | [Repo](#)

In Progress

- Architected an AWS event-driven pipeline ingesting stock/crypto prices via Kinesis, Lambda, DynamoDB, and S3
- Deployed fetcher, processor, and query Lambdas using EventBridge cron triggers, Kinesis event mappings, and API Gateway REST endpoints
- Built a React + TypeScript dashboard with Recharts to visualize live prices, historical trends, volume, and percent changes across 10+ tickers
- Automated CI/CD with GitHub Actions for linting, pytest/moto tests, Lambda packaging, and S3 frontend

Autonomous AI Assistant | [Repo](#)

- Built an autonomous research agent with LangChain and OpenAI API that decomposes queries and generates JSON reports, cutting research time by ~60%
- Engineered a RAG pipeline with PDF ingestion (PyMuPDF), semantic chunking, and a Chroma vector database using OpenAI embeddings for sub-second similarity retrieval
- Integrated arXiv API for academic paper ingestion with end-to-end citation tracking validation for structured outputs

SKILLS

Languages: Java, Python, C, JavaScript, TypeScript, HTML/CSS, SQL, Bash/Shell, Rust, OCaml, x86 Assembly

Frameworks & Libraries: FastAPI, Next.js, React, LangChain, TensorFlow, Pandas, NumPy, Pydantic, D3.js, Node.js

Infrastructure & Tools: PostgreSQL, pgvector, Supabase, Docker, Redis, Git, GitHub Actions, IBM MQ, Ollama, Podman

AI/ML: RAG Pipelines, Vector Search & Embeddings, OpenAI API, Chroma, LLM Integration, Qwen API

INTERESTS/ECs

Startup Shell, Running, Hip Hop Dance, Boulderling, Watches, Cardistry, Financial Markets, Balisongs, Star Wars