Adiseshan Ramanan

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Technical Skills

Languages: Python, SQL, C/C++, JavaScript, TypeScript
Data & Databases: PostgreSQL, MySQL, MongoDB, Redis, SQLite, ChromaDB (vector DB); Power BI, Streamlit
Data Engineering: Airflow, dbt, data quality checks, ETL pipelines
ML / AI: PyTorch, Deep Learning, Neural Networks, LLMs (Gemma, Ollama, Gemini API), ML classification, RAG / retrieval, MCP servers
Cloud & DevOps: AWS (S3, EC2, Lambda, CDK), Cloudflare Workers, Docker, Git
Backend: FastAPI, Node.js, Express, REST APIs
Areas of Interest: Machine Learning, AI, Neural Networks, Deep Learning, Data Science.

Experience

Software Engineering Intern, ZingHR | *Mumbai* | Completion Letter — Mar 2025 – Jun 2025

- Built a FastAPI service that extracts fields from invoices (JPEG/PNG, PDF, DOC) using a self-hosted LLM (Ollama, Qwen) and classifies them for reimbursement, reaching **90% classification accuracy**.
- Built a **Next.js / TypeScript platform** for an AI-powered HRMS platform named Astra.
- *Stack: Python, FastAPI, LLMs (Ollama, Qwen), Next.js, TypeScript, Docker*

Projects

NextReel: Transformer Movie Recommender | *Python, PyTorch, Streamlit* | GitHub | Live — Oct 2026 – Nov 2026

- Built a SASRec-style causal Transformer from scratch in PyTorch, with hand-written attention, to predict a user's next movie from watch order on MovieLens 1M (1M ratings, 6,040 users), trained on a laptop CPU.
- Under full-catalogue ranking, reached **test NDCG@10 of 0.160 vs 0.041** for a matrix-factorisation (BPR) baseline; showed that 100-negative sampled evaluation inflates HR@10 from 0.29 to 0.81.
- Deployed a Streamlit demo with cold-start recommendations, a shuffle test showing that watch order changes the top 10, and attention-based "where NextReel looked" explanations.

Quantum Copy-Move Forgery Detection (Final-Year Research) | *Python, PennyLane* — November 2025 – Present

- Building a Siamese swap test quantum neural network (pure QNN) that finds copy-moved regions in images by scoring patch-pair similarity with a swap test using the Siamese algorithm; reached **˜83% pairwise accuracy** on the CoMoFoD dataset benchmark.
- Pipeline: classical preprocessing and Zernike-moment features, angle-encoded with entanglement into the swap-test circuit.

RepairVision AI | *TypeScript, Cloudflare Workers, D1, Gemma 4* | GitHub | Live — Oct 2026

- 4-person hackathon build of an AI repair café platform: Gemma 4 fault diagnosis from a photo, plus a repair-vs-replace advisor.
- Owned the **120+ entry repair knowledge base and retrieval layer** across 7 device categories, grounding every AI diagnosis in a real, citable repair source instead of free-form model output.
- Secured 3rd position in the hackathon event by Hacktoberfest 2026 in college.

Climate-DAG: Multi-City Weather ETL | *Python, Apache Airflow, PostgreSQL, Docker, GitHub Actions* | GitHub — Aug 2026

- Built a daily Airflow pipeline that geocodes user-supplied cities, pulls live weather from the Open-Meteo API and loads it into PostgreSQL; cities are a **validated DAG parameter**, so adding a location needs no code change.
- Used **dynamic task mapping** to fan out one extract–transform–load chain per city at runtime, with **idempotent upserts**, exponential-backoff retries, task timeouts and in-place schema migration.
- Added GitHub Actions CI that runs DAG-integrity tests inside the same Astro runtime image used to run the pipeline.

Achievements & Certifications

Hacktoberfest Hack Day 2026, Amrita Vishwa Vidyapeetham — **3rd of ˜400 participants** (RepairVision AI) — Oct 2026

IBM Data Science Professional Certificate (12 courses), Coursera | Certificate — Mar 2025

Extracurricular Activities

Sports: College Football Team, Endurance running | **Performing Arts**: Singing Club, Percussion, Drama

Education

Amrita Vishwa Vidyapeetham, Coimbatore — Aug 2023 – Jul 2027 (expected)
B.Tech, Computer Science and Engineering

St. Gregorios High School, Mumbai | *Schooling and Intermediate* — 2010 – 2021; 2021 – 2023