

ADITYA ARYA

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EDUCATION

Rajiv Gandhi Institute of Petroleum Technology

Bachelor of Technology in Computer Science and Engineering, CGPA: 8.43 / 10
Institute of National Importance (Act of Parliament)

2023 – 2027

Amethi, UP

TECHNICAL SKILLS

Languages: Python, C++, Go (Golang), SQL, JavaScript, HTML/CSS

Core CS: Data Structures & Algorithms, System Design, Operating Systems, DBMS, Computer Networks

Backend & DevOps: Gin, FastAPI, Flask, gRPC, REST APIs, Docker, CI/CD (GitHub Actions), Git

Databases: MySQL, MongoDB, Redis, QdrantDB

ML/AI: PyTorch, Transformers, LangChain, Scikit-Learn, Pandas, NumPy, Hugging Face, Ollama, Unsloth

OPEN SOURCE

LFDT Hiero SDK (Linux Foundation Decentralized Trust)

Oct 2025 – Present

Contributor & Committer — C++, Python, Go | [PR Links](#)

- **48 merged PRs** across three production SDKs (C++, Python, Go) — spanning SDK core, TCK conformance, Client API, CI/CD automation, and documentation.
- Refactored the C++ SDK's **TckServer**, decoupling **JSON-RPC** protocol handling from the HTTP layer via a strongly typed **JsonRpcParser** — enabling independent protocol unit testing.
- Hardened the C++ SDK's network client with opt-in receipt/record **query failover** to alternate nodes.
- Authored **TCK conformance suites** (topic, contract, file, token services) across C++/Python SDKs; built **CI/CD bots** for assignment enforcement and merge-conflict detection, reducing maintainer load.

PROJECTS

StrataKV | Go, LSM Trees, WAL, Bloom Filters, Concurrency | [Repo](#) | pkg.go.dev

- Built and **published a Go library** — an LSM-tree-inspired embedded key-value store with **WAL-backed crash recovery**, immutable SSTables, tombstone deletes, and background compaction; importable via `go get`.
- Sustained **330K+ operations** under append-heavy load; compaction reclaimed **80% disk space** and collapsed segment count from **1,945 to 2 files**, cutting GET latency **6.6x**.
- Integrated per-segment **Bloom Filters**, reducing negative-lookup latency from **358ms to 163μs (2,196x speedup)**; diagnosed and fixed a silent filter-registration bug in the flush path through benchmark-driven analysis.
- Deployed as the **execution-cache layer** for Blan Cloud Engine — SHA-256 request hashing enables O(1) cache hits, replacing an external Redis dependency entirely.

Voice Agent Runtime | Go, Python, gRPC, Ollama, Faster-Whisper, Piper TTS | [Repo](#) | [Live](#)

- Built a fully local VAD→STT→LLM→TTS pipeline achieving **sub-1.1s end-to-end latency** on 4GB VRAM hardware by streaming each LLM sentence to TTS as it completes, eliminating full-response buffering.
- Reduced TTFT from **1.5s to 0.5s** by profiling and eliminating cold-start overhead in the STT stage; architected an inference split (STT/TTS on CPU, LLM on GPU at 2.2GB VRAM) for zero GPU contention.

Blan Compiler | C++17, Go, Docker, Gin | [Repo](#) | [Live](#)

- Built a **Turing-complete interpreted language** in C++17 with a custom lexer, recursive-descent parser, and memory-safe AST using `std::unique_ptr` and `std::variant` for dynamic type safety.
- Extended into a **cloud execution platform** with a concurrent Go backend, async worker orchestration, JWT auth, snippet persistence, Dockerized deployment, and StrataKV-backed execution caching.

EXPERIENCE

AmberFlux EdgeAI Private Limited

June 2025 – Aug 2025

AI Developer Intern | [Certificate](#)

- Improved retrieval relevance by **20–25%** by redesigning a RAG pipeline's ranking stage with query classification and hybrid scoring (**Reciprocal Rank Fusion** + normalized vector/BM25 combination).
- Built an evaluation suite on **RAGAS** Faithfulness and Context Precision metrics to catch retrieval regressions before deployment.
- Fine-tuned **Gemma-3-1B-IT** via **Unsloth** for a bilingual (English/Hindi) assistant; implemented memory tracking and state management to resolve multi-turn context loss.

ACHIEVEMENTS & CERTIFICATIONS

Amazon MLSS'26: Selected among **3,000 of 134,421** applicants nationwide (top 2.2%).

LeetCode: 250+ problems solved, Max Contest Rating **1643**.

Super Contributor, Hacktoberfest '25: Committer member — top open-source contributor recognition.

Merit-Cum-Means Awardee: Scholarship for top 10% students in batch.

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POSITIONS OF RESPONSIBILITY

- **Training and Placement Representative**, Dept. of CSE, RGIPT