

Abhishek Kumar

Software Engineer | Distributed Systems & Applied AI

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EDUCATION

Indian Institute of Technology Guwahati

B.Tech, Computer Science and Engineering

Guwahati, India

Aug 2020 - May 2024

EXPERIENCE

Full Stack Engineer

SLB

Jul 2024 - Present

Pune, India

- Shipped **REST API** features across **Python backend microservices** (gateway, config, schema, ingestion, loading) on **PostgreSQL** for an oil-and-gas **data-migration platform**; mentored 2 interns and 4+ engineers
- As **primary contributor**, rebuilt the core **Java** extractor (replacing **Apache NiFi**) to support multiple data-source types, unblocking a 5+ engineer backend team and enabling the first production client migrations
- Designed a **4-mechanism HMAC authentication** flow for on-prem agents (**Diffie-Hellman**, **Vault**, **KeyCTL**, **OTP**), deployed to its first enterprise client; led a generic **SQL** connector end-to-end with an **Angular** UI

Software Engineer Intern

MAQ Software

May 2023 - Jul 2023

Hyderabad, India

- Built 5+ **Power BI** reports and **ETL pipelines** with **Azure Data Factory** and **Databricks** over **SQL Server**; earned a **pre-placement offer**

PROJECTS

Setu — Hybrid Data-Migration Platform | *Go, Next.js, Postgres, River, S3* | Live | Docs

- Dataset-centric ETL platform** with a **control-plane** / **data-plane** split: a **Go** monorepo (apiserver, worker, engine, agent) runs one streaming **ETL engine** identically in the cloud and at the edge; deployed **live** (Vercel, Render, Neon, Supabase S3) and validated by moving **1.72M+ rows**
- Hybrid edge agent** (outbound-only) with a long-poll job protocol and **atomic leasing** (Postgres FOR UPDATE SKIP LOCKED), heartbeat + lease-TTL **reaper**, and exponential backoff; **edge secrets** resolved on-host and never sent to the cloud, with per-connection cloud/agent **placement**
- Durable runs** on a **River** queue (resumable, cancellable, **SSE** live logs) over a pluggable **blob seam** (filesystem/S3) with automatic **direct-vs-staged** execution, cursor-based **incremental** watermarks, and cron scheduling

MCP-Suite — Model Context Protocol Servers | *TypeScript, Node, MCP SDK* | GitHub | npm

- Published 6 MCP servers to npm** (@abhishekmcp/*, **150+** tools) for **LLM agents** — incl. **semantic search** over ONNX embeddings, pure-JS git via **isomorphic-git**, and a **read-only SQL** guard
- Zero-secret CI release pipeline** (**GitHub Actions**, npm **Trusted Publishing** / **OIDC** + provenance) to npm and the official MCP registry; hardened with sandboxing, **SSRF** guard, and OAuth

VS Code Extensions | *TypeScript, VS Code API* | Compile & Run | Aurora Preview

- Compile & Run** (**1,400+** installs) — one-command **C++** compile-and-run for competitive programming with file-based stdin/stdout, auto-activation, and PowerShell-safe execution
- Aurora Preview** — a live **Markdown** preview extension: **markdown-it** rendering with **Mermaid** + **KaTeX**, **PDF/HTML** export, and data-line source-mapped scroll sync

Drishti — AST-Aware RAG System | *Python, FastAPI, LangGraph, Qdrant, Tree-sitter* | GitHub

- AST-aware RAG** over code and docs — **Tree-sitter** chunking (5 languages), a **from-scratch BM25** + dense hybrid search fused via **RRF** with **Cohere** rerank, and a self-correcting **LangGraph** agent
- Production-shaped **FastAPI** service — async **PostgreSQL**, **Arq/Redis** workers, **MinIO** storage, **JWT/RBAC**, **SSE** streaming, and a **RAGAS** eval harness, containerized with **Docker Compose**

TECHNICAL SKILLS

Languages: Go, Python, Java, TypeScript, C++, SQL

Backend: Spring Boot, FastAPI, gRPC, REST, microservices, event-driven, SSE

ML and AI: RAG, LLM agents (LangGraph, MCP), hybrid retrieval (BM25 + dense + RRF), vector search (Qdrant)

Data and Infra: PostgreSQL, Redis, Kafka, River, S3/MinIO, Docker, Kubernetes

Frontend and Tools: React, Next.js, Tailwind, Git, Linux, GitHub Actions (CI/CD, OIDC), Azure