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Education

B.E. in Computer Science and Engineering

Chandigarh University, Mohali

2022 – 2026

CGPA: 8.91

Class XII (HPBOSE)

B.B.N.B. Govt. Sen. Sec. School, Saloh, Himachal Pradesh

93.4%

Experience

Software Engineer Consultant (Backend & Distributed Systems)

Jul 2026 – Present

AlphaGrep Securities, GIFT City, Gujarat (On-site)

- Architected and deployed a fault-tolerant **distributed lock** management service for ClickHouse workflows, implementing lease-based locking, heartbeat monitoring, automatic stale lock recovery, priority scheduling, and centralized coordination to eliminate race conditions and ensure reliable concurrent processing.
- Led the end-to-end development of a production-grade Known Breaks Management platform used by **100+ Operations and Business users**, implementing RBAC, bulk CSV ingestion, lifecycle workflows, configurable business rules, and cross-entity validations across accounts, brokers, symbols, and trading teams.
- Engineered a high-performance FIFO-based financial cost basis engine supporting multi-exchange and multi-currency portfolios, implementing tax-lot accounting and position matching while achieving **~98% reconciliation accuracy** against broker (SocGen) reports.
- Designed and implemented configurable reconciliation pipelines for daily, MTD, and custodian-level financial workflows with automated discrepancy classification, validation, reporting, and alerting.
- Refactored legacy reconciliation services into a configuration-driven architecture, enabling rapid onboarding of new brokers, exchanges, and reconciliation workflows with minimal engineering effort.

Software Engineer Intern (Backend Engineering & Financial Systems)

Aug 2025 – Jun 2026

AlphaGrep Securities, GIFT City, Gujarat (On-site)

- Built a fault-tolerant ETL pipeline for large-scale financial datasets with metadata-driven incremental processing, idempotency, atomic writes, schema-aware transformations, and parallel CSV-to-Parquet ingestion.
- Optimized ingestion for **3000+ datasets** (~1.8M rows each) using concurrent processing and efficient file handling, improving end-to-end throughput by **approximately 4×**.
- Designed and deployed Apache Airflow workflows and scalable reconciliation pipelines with automated discrepancy classification, validation, reporting, and operational alerting.

Projects

FrameWise AI (*FastAPI, LangChain, Gemini, ChromaDB, Faster-Whisper*)

GitHub

- Built an AI-powered video learning platform that transforms videos into searchable notes, quizzes, and context-aware Q&A using LLMs and **Retrieval-Augmented Generation (RAG)**.
- Developed an end-to-end **RAG pipeline** using FastAPI, Faster-Whisper, LangChain, ChromaDB, and Gemini for transcription, embedding generation, semantic search, and grounded AI responses.

ZeroSchedule - Concurrent Job Scheduler (*Go, net/http, SQLite, Goroutines, Channels, os/exec*)

GitHub

- Engineered a concurrent job scheduling system using Go, REST APIs, SQLite, buffered channels, and a configurable **worker pool** to asynchronously queue and execute background jobs.
- Implemented **subprocess lifecycle management** with *os/exec*, job state transitions (**QUEUED → RUNNING → DONE/FAILED**), execution timestamps, context cancellation, and graceful worker shutdown.

Digital Wallet Backend (*Python, FastAPI, PostgreSQL, Async SQLAlchemy*)

GitHub

- Engineered a **backend transaction processing system** supporting account management, balance tracking, ledger maintenance, and secure fund transfers through RESTful APIs.
- Implemented **ACID-compliant, atomic, and idempotent** transaction workflows using PostgreSQL and Async SQLAlchemy, ensuring data integrity and consistency under concurrent operations.

Technical Skills

Languages: Go, Python, C++, SQL

Backend: REST APIs, FastAPI, Flask, SQLAlchemy, Pydantic, Async Programming

Systems: Distributed Systems, Concurrency, Distributed Locking, Idempotency, Caching, System Design

Databases: PostgreSQL, ClickHouse, MySQL, SQLite

Tools: Linux, Git, Apache Airflow