

Anirudh Chandan

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EDUCATION

GRAPHIC ERA UNIVERSITY

B.Tech. in Computer Science and Engineering; CGPA: 9.11

Dehradun, India

July 2020 – July 2024

EXPERIENCE

DOCPLIX

Software Engineer

Remote

Nov 2025 – Present

- Architected **30+ Node.js/Sequelize REST APIs** for EHR, executing a zero-downtime v1-to-v2 migration with **100% data integrity**.
- Implemented **optimistic concurrency control** and distributed **Redis locks** for the centralized synchronization service, eliminating inventory mismatches and race conditions.
- Architected a push-based event notification system using **WebSockets** and **Redis Pub/Sub**, replacing legacy API polling and reducing backend traffic by **80%**.
- Secured clinical endpoints by implementing **Role-Based Access Control (RBAC)** and sliding-window **rate limiting** via Redis to mitigate brute-force vulnerabilities.
- Reduced record retrieval latency by **40%** through advanced **Sequelize indexing** and SQL query execution plan optimizations.

GENPACT

Software Engineer (Promoted from Intern)

Bengaluru, India

Feb 2024 – Oct 2025

- Engineered idempotent processing semantics for the **Kafka** tax ingestion pipeline, utilizing database constraints to guarantee **exactly-once execution** during network partitions.
- Optimized high-volume file ingestion by implementing multipart uploads and **presigned S3/GCP URLs**, bypassing backend memory bottlenecks and reducing infrastructure costs.
- Integrated structured logging and distributed tracing across **serverless Python** microservices on **GCP Cloud Functions**, reducing MTTR for critical production bugs by **40%**.
- Developed resilient **Flask** backend services with automated retry mechanisms and **Dead Letter Queues (DLQ)**, serving 24 frontend modules without data loss during outages.

PROJECTS

PYDB: RELATIONAL B-TREE STORAGE ENGINE

[GITHUB](#)

Python, Binary File I/O, Data Structures, ACID Compliance

Architected a disk-based transactional database engine in **Python**, bypassing OS caching for custom **8KB paged memory management**. Implemented a **dual B-Tree architecture** achieving **0.29ms read latencies**. Engineered an ACID-compliant **Write-Ahead Log (WAL)** ensuring zero data corruption while sustaining **approx. 2,400 writes/sec**.

NEXUS CHAT: REAL-TIME COMMUNICATION

[GITHUB](#)

Node.js, PostgreSQL, Redis, BullMQ, WebRTC, Socket.io

Engineered messaging architecture decoupling WebSocket ingestion from DB writes using **BullMQ/Redis**. Implemented a **Write-Behind Caching** strategy for read-receipts, reducing DB write load by **99%**. Architected scalable storage via **Range Partitioning** and **GIN indexes (TSVECTOR)**. Integrated **WebRTC** video streaming.

DELHI TRANSIT: REAL-TIME TRACKING

[GITHUB](#)

Node.js, Redis Streams, MongoDB (GeoJSON), WebSockets, React

Architected a high-throughput GPS ingestion pipeline using **Redis Streams** to decouple raw location updates from persistent storage. Optimized spatial querying via **MongoDB 2dsphere indexes**, reducing bounding-box search latency for nearby buses to under 50ms. Engineered a dynamic client broadcast system utilizing **WebSockets** and **Redis Pub/Sub** to stream live coordinates to the frontend with sub-100ms latency.

TECHNICAL SKILLS

Languages & Backend: Python, Node.js, JavaScript, C++, SQL, Express.js, Flask, WebSockets, REST APIs

Infrastructure & DBs: PostgreSQL, MongoDB, Redis, Kafka, AWS (EC2, S3), GCP, Docker

Frontend: React.js, Tailwind CSS, Zustand, HTML/CSS

ACHIEVEMENTS

- **Academic Excellence:** Graduated with a 9.11 CGPA in Computer Science, demonstrating consistent mastery of core computing fundamentals and architecture.
- **Algorithmic Proficiency:** Mastered 450+ complex optimization and data structure challenges on LeetCode, building deep intuition for time/space complexity tradeoffs.
- **Open Source Contributor:** Successfully merged pull requests for core API development in Node.js ecosystem projects during Hacktoberfest, demonstrating the ability to navigate third-party codebases.