

Engineering Projects

High-Performance URL Shortener API

github.com/amit-rajpoot/url-shortener

- Designed a low-latency URL shortening service using **Node.js** and **Redis**, implementing robust HTTP routing and strict input validation schemas.
- Engineered efficient CRUD operations and permanent redirects, handling high-throughput traffic while preventing cache stampedes.

Scalable Pastebin & Snippet API

github.com/amit-rajpoot/snippet-api

- Architected a secure code snippet sharing platform with **FastAPI** and **PostgreSQL**, focusing on proper RESTful API design and database relationships.
- Implemented cursor-based pagination and automated snippet expiration using TTL indexes and scheduled background cleanup tasks.

Centralized Authentication Service

github.com/amit-rajpoot/auth-service

- Built an SSO-capable authentication microservice in **Django**, implementing secure bcrypt password hashing, session management, and granular permissions.
- Secured service-to-service communication with **JWTs**, utilizing HTTP-only cookies and strict refresh-token rotation policies.

Advanced Task Management API

github.com/amit-rajpoot/task-api

- Developed a comprehensive task management backend employing complex relational modeling and ACID-compliant database transactions.
- Engineered advanced query capabilities including dynamic filtering, sorting, and keyset pagination across a multi-tenant service architecture.

Distributed File Storage API

github.com/amit-rajpoot/storage-api

- Architected a robust file storage service capable of handling large multipart uploads and streaming downloads directly to **AWS S3**.
- Integrated comprehensive file metadata tracking and asynchronous processing via background jobs for media compression.

Education

B.Tech in Computer Science & Engineering

SR Group of Institutions (SRGI)

Aug 2021 – May 2025

- Maintained a 9.2 SGPA with a rigorous coursework focus on Distributed Systems, OS, and Data Structures.
- Solved over 400+ algorithmic challenges on **LeetCode** and HackerRank, mastering dynamic programming and graph theory.
- Won 1st place in the university-level hackathon for developing a collaborative, real-time code editor.

Technical Skills

- Languages:** Python, JavaScript, TypeScript, SQL, Java, C++
- Backend:** Node.js, Express, Django, FastAPI, WebSockets, REST, GraphQL
- Databases:** PostgreSQL, MongoDB, Redis, MySQL, SQLite
- DevOps & Tools:** Docker, AWS (EC2, S3), GitHub Actions, NGINX, Linux, Git, CI/CD
- Concepts:** System Design, Microservices, Authentication (JWT/OAuth2), OpenTelemetry, ORMs