

# UTTKARSH RUPAREL

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## Skills

**Cloud, DevOps & Infrastructure:** Kubernetes, Helm, Docker, AWS (SQS, S3, RDS, Lambda, VPC), Terraform, CI/CD (GitHub Actions), Observability (Prometheus, Grafana, Datadog), NGINX, Linux  
**Backend & Distributed Systems:** Node.js (Express, Fastify), FastAPI, PostgreSQL, MongoDB, Redis, Kafka (event streaming), BullMQ  
**Testing:** k6 (load testing), Jest (unit/integration), Playwright (E2E)  
**Languages:** Java, TypeScript, JavaScript, Go, Python, SQL  
**Frontend:** React, Next.js, Tailwind CSS  
**Foundations:** System Design, Data Structures & Algorithms, Object-Oriented Programming, Operating Systems, Computer Networks, Database Management Systems, Distributed Systems

## Projects

### [BitLink](#) — Distributed URL Redirection & Analytics Platform

*AWS, Node.js, Express, Redis, NGINX, Docker, Terraform, Prometheus, Grafana*

- Designed and operated a **stateless** URL redirection platform supporting short links, QR codes, and real-time analytics, optimized for the **redirect hot path** behind an **NGINX reverse proxy** on **AWS** using stateless, **horizontally scalable services**.
- Sustained **~2–4K RPS** under burst traffic with **p95 redirect latency below 150 ms**, achieved through **Redis hot-path caching**, **request rate limiting**, and **horizontally scalable EC2 services**.
- Reduced **redirect-path latency by ~55–65% by decoupling** write-heavy analytics from **synchronous requests using Redis-backed background jobs**, with **Terraform-managed infrastructure**, **Prometheus/Grafana** metrics and tracing, and automated **Dockerized CI/CD**.

### [Anchor](#) — Automated Student Productivity Platform

*Next.js, Supabase, Redis, GitHub Actions, Docker*

- Built modular backend workflows for authentication, assignments, attendance, and scheduling using TypeScript, eliminating redundant queries and simplifying request paths across core features.
- Improved API latency by ~80% (1500 ms → 250 ms) by introducing Redis-backed caching** and a **Token Bucket rate limiter (~50 requests/bucket)**, preventing backend overload during peak usage.
- Implemented **CI/CD pipelines using GitHub Actions**, enabling automated builds, tests, and deployments and reducing manual deployment effort to near zero.

### [GradCircle](#) — Alumni Engagement & Donation Platform

*React, Node.js, Express, Supabase*

- Implemented secure backend services for **JWT-based authentication**, **RBAC**, donation workflows, and voicebot integration to support alumni engagement and contribution flows.
- Reduced API response times by ~60% (400 ms → 150 ms) during donation and alumni operations by optimizing query patterns and introducing database indexing.**

## Education

### B.Tech in Computer Science & Engineering |

Symbiosis Institute of Technology, Pune

### Higher Secondary Education |

Excellencia Junior College, Secunderabad

**CGPA: 7.53**

(2023 - 2027)

**Percentage: 85.5%**

(2021 - 2023)

## Leadership & Achievements

**ACE 2.0 Finalist (September 2025)** — Selected from over 400 teams for designing a smart-governance platform that unified key public services into a single system.

**Competitive Programming Co-Head, GDSC SIT Pune (July 2025 – Present)** — Organized coding contests, workshops, and mentorship sessions for 100+ students; supported problem-solving training and strengthened the community's CP engagement.