

OMPRAKASH RANA

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PROFESSIONAL SUMMARY

Computer Engineering graduate and MSc Computer Science (Cloud Computing) candidate with hands-on experience building backend services, event-driven microservices and containerised deployment workflows. Experienced with Go, Python, Django, PostgreSQL, Redis, RabbitMQ, Docker, Kubernetes, GitHub Actions, Helm and Argo CD. Built and tested systems involving caching, asynchronous processing, Saga and Outbox patterns, API design, observability, CI/CD and Kubernetes deployment.

TECHNICAL SKILLS

Languages: Go, Python, C++, C, JavaScript, SQL

Backend: Django, Django REST Framework, REST APIs, HTTP, Gunicorn

Databases: PostgreSQL, MySQL, SQLite, Redis

Distributed Systems: Microservices, RabbitMQ, Saga Pattern, Outbox Pattern, asynchronous messaging, idempotency

Cloud & DevOps: Docker, Docker Compose, Kubernetes, Helm, Argo CD, GitHub Actions, Docker Hub, Nginx, AWS

Testing & Tools: Pytest, Postman, k6, Git, GitHub, OpenAPI/Swagger, Prometheus, Grafana

PROJECT EXPERIENCE

Scalable URL Shortener and Click Analytics

Go | PostgreSQL | Redis | Nginx | Docker Compose | Prometheus | Grafana | k6

- Built a production-oriented URL shortening API using layered handler, service and repository architecture with PostgreSQL as the system of record.
- Implemented Base62 short-code generation, custom aliases, expiry handling, idempotent URL creation, request validation and Redis-backed rate limiting.
- Added Redis cache-aside reads and a Redis Streams worker for asynchronous click analytics, keeping analytics persistence off the redirect request path.
- Deployed 3 stateless API replicas behind Nginx; measured 2,500 requests/second for 60 seconds with 0 failed requests and recorded server-side p50/p95/p99 latency of 2.50/4.75/4.95 ms.
- Added Prometheus/Grafana observability, health/readiness endpoints, structured logging, Docker deployment and automated tests; verified Redis failure fallback and API replica failover.

Event-Driven Order Processing with Microservices

Django | PostgreSQL | RabbitMQ | Kubernetes | Helm | Docker Compose | Kong

- Built an e-commerce order flow with separate Order, Stock and Payment services using Django and PostgreSQL.
- Used RabbitMQ to pass messages between services and applied the Saga pattern to handle order, stock and payment steps.
- Added the Outbox Pattern to store outgoing messages with service data before they are published to RabbitMQ.
- Ran the services with Docker Compose and prepared Kubernetes deployment with k3d, Helm and Kong API gateway.
- Tested failed-order cases, including unavailable stock and rejected payments, with Postman and checked the resulting service flow.

GitOps DevSecOps CI/CD Pipeline for Django

Django | MySQL | Docker | GitHub Actions | Docker Hub | Kubernetes | Helm | Argo CD

- Built a GitOps deployment workflow for a Django Library Management System using GitHub Actions for CI and Argo CD for continuous delivery to Kubernetes.
- Automated Docker image builds and Docker Hub publishing on main-branch changes, using GitHub Actions cache and run-number image tagging.
- Automated Helm values updates so newly built image tags are committed back to Git and detected by Argo CD for deployment.
- Configured Kubernetes Deployment, Service, liveness/readiness probes, ServiceAccount, Ingress templates and optional Horizontal Pod Autoscaler through Helm.
- Implemented application security controls including bcrypt password hashing, role-based access control, non-root container execution and environment-based configuration.

PROFESSIONAL EXPERIENCE

MotionCut Studio — Frontend Web Development Intern | Sept 2023 – Nov 2023

- Developed responsive web interfaces using HTML, CSS and JavaScript for desktop and mobile environments.
- Investigated UI issues and implemented frontend improvements to maintain consistent behaviour across screen sizes.
- Collaborated with developers to understand requirements, resolve implementation issues and deliver changes within an existing development workflow.

EDUCATION

University of East London, UK — MSc Computer Science (Cloud Computing) | Sept 2025 – Sept 2026

CMR Institute of Technology — BE Computer Engineering | Oct 2020 – May 2024 | GPA: 8.25/10

CERTIFICATIONS & ACHIEVEMENTS

- AWS Academy Graduate – Cloud Foundations
- Datacom Software Development Job Simulation – Forage: software review, root-cause analysis and bug fixing
- Best Mini Project Award – Currency Converter
- Participant – Shristi 2022 Hackathon, BMSCE