Dipto Bhattacharjee

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EXPERIENCE

KOOLIO.AI | Software Engineer
April, 2023 – Present | Remote

- Led backend system architecture & cloud infrastructure (AWS & GCP) for a production app delivering 10+ core features with 99.9% uptime.
- Architected modular microservices with event-driven design, asynchronous task execution & efficient inter-service communication - improving system reliability & cutting API response latency by 56%.
- Designed & implemented Google OAuth 2.0, Apple SSO & Facebook SSO for secure authentication, boosting user onboarding by 47%.
- Developed a full-scale subscription management system using Stripe APIs with trials & webhooks, ensuring seamless billing & compliance.
- Automated deployments with CI/CD pipelines (GitHub Actions, Docker, Cloud Build) enabling zero-downtime releases & 70% faster release cycles, & 95% reduction in manual deployment errors.
- Migrated ML inference workloads from AWS EC2 to ECS, reducing compute overhead & cutting infrastructure costs by 40%.
- Engineered real-time collaboration architecture using Socket.IO, Redis Pub/Sub & WebSockets, scaling from MVP to 1,000+ concurrent sessions with low latency & high reliability.
- Developed LiveKit-based AI Voice Agent system supporting multi-user audio rooms with live transcription & recording, designed for fault-tolerant, scalable real-time collaboration.
- Revamped audio processing pipelines, implementing asynchronous task handling & caching, increasing processing throughput by 66.7%.
- Streamlined PostgreSQL & NoSQL databases (Redis, DynamoDB, Firestore), reducing storage footprint by 35% & latency by 50%.
- Resolved 100+ critical backend production issues, improving system stability, uptime & reducing average incident response time by 50%.

BASEL PRACTITIONERS | Technical Developer Intern
December, 2022 – May, 2023 | Remote

- Delivered interactive forecasting dashboards via AWS QuickSight, S3 & Athena for data-driven insights.
- Architected scalable backend on Spring Boot & database schemas with MySQL, ensuring maintainability & efficient data flows.
- Optimized database performance, improving query execution & reducing latency by 50%.

PROJECTS

COLLABORATIVE NOTES APP (GitHub Link)

- Event-driven collaborative notes app with real-time sync, built in Python(FastAPI, Socket.IO & Redis); containerized with Docker, deployed via Docker Compose & extended to Kubernetes (Minikube) with Kompose generated configs.

CRYPTO-COMPRESS PIPELINE (GitHub Link)

- High-performance Enigma encryption + Huffman compression tool built with Java.

BOOK INVENTORY MANAGEMENT APP (GitHub Link)

- Book Inventory Management System built with MERN stack.

SKILLS

PROGRAMMING & BACKEND
- Python (Flask, FastAPI, Django)
- Java (Spring Boot)
- Node.js (Express.js, Axios) • TypeScript
- REST APIs • GraphQL • gRPC • tRPC
- SQL (PostgreSQL, MySQL, MariaDB)
- NoSQL (DynamoDB, Firestore, MongoDB) • Caching (Redis, ElastiCache, Memorystore, Memcached) • C • C++
- Go • Kotlin

CLOUD & DEVOPS
- AWS • GCP • Docker • Podman
- Docker Compose • Podman Compose
- CI/CD (GitHub Actions, GitLab CI)
- Cloud Build • CloudFormation
- Amplify • Firebase • Buildpacks
- Monitoring (CloudWatch)

SYSTEM DESIGN & ARCHITECTURE
- Microservices Architecture
- Scalable Distributed Systems
- Stripe Payments
- AI Voice Agents (LiveKit)
- Real-Time Collaboration (WebSockets, Socket.IO) • Authentication & Authorization (OAuth 2.0, Apple SSO, Facebook SSO)

TOOLS & PLATFORMS
- Git • GitHub • GitLab • Bash
- Maven • uv • npm
- Nginx • Linux • Postman

CURRENTLY LEARNING
- Kubernetes • Rust • Terraform

EDUCATION

GOVERNMENT COLLEGE OF ENGINEERING AND CERAMIC TECHNOLOGY
Bachelor of Technology in Computer Science and Engineering
2020 - 2024
Kolkata, West Bengal, India
Cum. GPA: 9.79 / 10.0