

Charan Lokku

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Education

The University of Texas at Dallas

Master of Science in Computer Science

Jan 2023 - Dec 2024

Richardson, Texas

Relevant Coursework: Design & Analysis of Algorithms, Database Design, Machine Learning, Web Programming Languages, NLP, data structures

Experience

WinWin Labs

Software Engineer

Feb 2025 – Present

Riverside, California

- Architected and implemented event-driven microservices using AWS Lambda, API Gateway, and DynamoDB in a high-availability system handling 50,000+ daily transactions with 99.99% uptime via circuit breaker patterns
- Built real-time customer service notification system using Python, MQTT, and WebSocket's, improving message throughput by 40% through low-latency protocol optimization
- Developed secure and performant RESTful APIs with FastAPI, integrating JWT authentication, Redis-based caching, and database query optimization to reduce response time by 35%
- Created full-stack monitoring and alerting platform using React (frontend), Python and Spark Streaming (backend), and WebSocket push notifications, cutting incident response time by 50%

Projects

Intelligent Expense Management Platform | React, TypeScript, Django, PostgreSQL, AWS S3, Celery, Scikit-learn

- Built full-stack platform with Django REST API, JWT auth, and React frontend for expense logging and history tracking
- Implemented Celery and Redis for OCR receipt parsing and ML-based auto-categorization using Tesseract and Scikit-learn
- Used PostgreSQL and S3 for secure storage, planned analytics dashboard, audit trails, and mobile capture

Distributed Video Segment System | FastAPI, gRPC, RabbitMQ, Redis, MinIO, React, HLS.js, Kubernetes, Grafana

- Built async FastAPI backend with gRPC microservices, WebSocket live encoding updates, and JWT-secured video access
- Processed uploads via RabbitMQ, stored segments in MinIO, and cached HLS manifests with Redis
- Deployed on Kubernetes with Grafana; planned adaptive bitrate, ML prefetching, and watermarking

Modular Payment Routing Engine | Spring Boot, Java, PostgreSQL, RabbitMQ, React, Docker, Spring Security

- Developed Spring Boot backend with transaction-safe routing, retry queues, and modular payment provider adapters
- Built React dashboard for transaction tracing; secured flows using Spring Security, JWT, and webhook signature validation
- Planned fraud detection, webhook analytics, and ML-based gateway scoring

Real-Time Geo Dispatch System | NestJS, Socket.io, Redis, PostgreSQL and PostGIS, React, Mapbox, Docker, JWT

- Built real-time backend with NestJS and Socket.io, leveraging Redis pub/sub and PostGIS for live driver-rider matching
- Developed React and Mapbox frontend to visualize real-time locations and ETAs; implemented JWT auth and spoof prevention
- Planned mobile PWA, surge detection, and ML-driven dispatch prioritization

Technical Skills

Languages: Python, Java, HTML, CSS, JavaScript, SQL, C++

Backend: Node.js, FastAPI, Django, Spring Boot, gRPC, Celery, RabbitMQ, REST, JWT

Frontend: React, Zustand, React-DnD, Mapbox, HLS.js

Databases: PostgreSQL, NoSQL, MongoDB, Redis, DynamoDB, PostGIS, GCP

Cloud & DevOps: AWS (Lambda, S3, API Gateway), Docker, Kubernetes, Prometheus

Realtime/Data: Socket.io, web Sockets, MQTT, Kafka, Hadoop, Apache Spark Streaming, Redis Pub/Sub, HLS

ML/OCR: Scikit-learn, Tesseract, classification, analytics

Tools: Git, CI/CD, Agile, RBAC, A/B Testing, Microservices, Postman, Version control