

Backend Engineer with 6+ years of experience building scalable systems and delivering production services handling millions of requests monthly.

Skills

- **Languages & Frameworks:** Golang, Typescript Node.js (NestJS), PHP
- **Distributed Systems & Architecture:** Microservices, gRPC, Event-Driven Systems, REST APIs, WebSockets, RabbitMQ
- **Databases:** PostgreSQL, MySQL, Redis
- **Infrastructure & DevOps:** Docker, Kubernetes (KIND, Helm), Nginx, Linux, Git, CI/CD (Github Actions/Bitbucket Pipelines)
- **Cloud & Monitoring:** AWS, GCP, Azure, Prometheus, Grafana, Loki, Jaeger
- **Other Tools & Practices:** JWT, Load Testing, System Design, OpenTelemetry, API Gateway

Work Experience

Senior Software Engineer

Next Generation Innovations

June 2021–Present

Karachi, Pakistan

- **Architected and scaled a voice-based AI telephony system** (built on Asterisk, Node.js, RabbitMQ, Redis, PostgreSQL), capable of handling over **144,000 calls/day**, optimizing EC2 resources and third-party integrations for real-time audio processing.
- **Integrated Speech-to-Text and Text-to-Speech pipelines** with OpenAI and third-party APIs to create an intelligent call bot capable of real-time conversation.
- **Redesigned the legacy monolith into microservices**, selecting gRPC for internal communication and RabbitMQ for async messaging; improved deployment speed, fault isolation, and team productivity.
- **Implemented production-grade observability** using Prometheus, Grafana, Loki, and Jaeger; developed custom metrics, structured logs, traces, and dashboards to monitor service health, performance, and failures across microservices at scale.
- **Stress-tested** Asterisk-based telephony system for **concurrent call handling**. **Monitored resource usage** (CPU, RAM, network) across services (**Asterisk, Node.js microservices, Redis, RabbitMQ**) to ensure **stability under peak load**.
- Authored detailed internal documentation including system architecture, debugging guides, scaling benchmarks, and load testing results to foster cross-team knowledge sharing.

Backend Developer

Aekpani Networks

June 2019-May 2021

Karachi, Pakistan

- Developed core backend APIs for a Property Management System using Laravel and MySQL, including real-time booking calendars and inventory automation.
- Proposed and led the transition to a **multi-tenant SaaS architecture** for a car parking system, replacing per-client codebases and improving scalability and maintainability.
- Led 3 junior engineers in developing the SaaS platform, standardizing features and significantly reducing bug resolution and onboarding time.
- Built a dynamic CMS for hotel websites with theme-based development and designed PostgreSQL schemas to support flexible content delivery.
- Automated deployments with a custom Bash script for bundling and releasing assets, minimizing human error and improving deployment efficiency.

Projects

Video Streaming Microservices Platform (Golang, Kubernetes, gRPC)

- Developed a complete microservices-based video streaming system using **Golang, gRPC, RabbitMQ, PostgreSQL, and Redis**.
- Implemented **REST APIs** (Gin) at the gateway, **graceful shutdowns**, and **gRPC health checks** across all services.
- Integrated **Prometheus, Loki, and Jaeger** for end-to-end observability (metrics, logs, and traces).
- Built **multi-stage Dockerfiles** and deployed with both **Docker Compose** and **Kubernetes (KIND)**.

- Designed the full architecture with service diagrams, dashboards, and detailed documentation in the GitHub repo:
<https://github.com/SagarMaheshwary/microservices>

Education

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| • Udemy – AWS Certified Solutions Architect Associate (Course) | 2025 |
| • Govt. Islamia Science College - Intermediate/Pre-Engineering | 2015-2017 |
| • Prince Progressive Secondary School - Matriculation | 2014 |