

Waleed Khan

Software Engineer — Backend & Distributed Systems

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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of hands-on experience building and operating production web, mobile, and distributed systems. Strong backend experience with Node.js, C#, ASP.NET Core, PostgreSQL, Redis, MongoDB, and SQL Server. Designed and integrated 20+ independently deployable microservices using gRPC and event-driven messaging. Experienced in production infrastructure, Docker, Kubernetes, AWS, Microsoft Azure, Nginx, load balancing, object storage, monitoring, and CI/CD. Built high-throughput asynchronous workflows using JetStream and background workers, reducing infrastructure and messaging costs by approximately 30%. Experienced in caching, performance optimization, distributed systems, real-time communication, inventory, payments, orders, logistics, search, and marketplace platforms.

TECHNICAL SKILLS

Languages: C#, JavaScript, SQL, PHP, Dart, HTML/CSS

Backend: ASP.NET Core, .NET, Entity Framework Core, Node.js, Express.js, Laravel, REST APIs, gRPC

Architecture: Microservices, Distributed Systems, Event-Driven Architecture, CQRS, Clean Architecture, Modular Monolith, Saga, Outbox Pattern, Idempotency, Adapter Pattern

Databases: PostgreSQL, SQL Server, MongoDB, Redis, Elasticsearch

Messaging & Async Processing: NATS JetStream, BullMQ, Redis Queues, WebSockets, Socket.IO, Background Workers

Cloud & Infrastructure: AWS, Microsoft Azure, Docker, Kubernetes, Docker Compose, Ubuntu/Linux, Nginx, Load Balancing, S3, MinIO, PM2, systemd, SSL/TLS, DNS, Reverse Proxy

DevOps & Operations: CI/CD, Production Deployments, Monitoring, Logging, Backups, SSH Hardening, Performance Optimization

Security: JWT, Authentication, Authorization, RBAC, Password Hashing, Rate Limiting, Account Lockout

Mobile: Flutter, REST API Integration, Authentication, File Uploads

EXPERIENCE

EasyBazaar

3+ Years

Software Engineer – Backend & Distributed Systems

- Built and operated production systems for an e-commerce marketplace covering buyer, seller, admin, order processing, inventory, logistics, messaging, search, notifications, and automation.
- Designed and integrated 20+ independently deployable microservices, defining service boundaries, API contracts, asynchronous workflows, and inter-service communication using gRPC and event-driven messaging.
- Designed distributed backend workflows using Node.js, Express.js, PostgreSQL, Redis, NATS JetStream, BullMQ, and background workers for order processing, inventory, notifications, messaging, and automation.
- Implemented NATS JetStream-based asynchronous processing and event-driven workflows, reducing infrastructure and messaging-related costs by approximately 30% through more efficient workload distribution and service communication.
- Implemented Redis caching across performance-sensitive services and optimized database access, pagination, asynchronous processing, and image handling to improve response times and achieve strong cache hit rates for frequently accessed data.
- Designed and operated production-grade infrastructure using Docker, Kubernetes, AWS, Microsoft Azure, Nginx, load balancers, S3-compatible object storage, SSL/TLS, DNS, systemd, PM2, and CI/CD workflows.
- Optimized cloud infrastructure and service architecture across AWS and Azure to reduce unnecessary resource consumption and operating costs while maintaining production availability and scalability.
- Implemented production monitoring, logging, health checks, backups, and operational controls to identify service failures, performance issues, and infrastructure problems.
- Designed real-time communication infrastructure using Socket.IO, Redis, WebSockets, JetStream, role-scoped rooms, reconnect handling, and distributed coordination for buyers, sellers, and support agents.
- Designed an order and logistics pipeline integrating three courier providers with different API contracts using the Adapter Pattern, providing a unified internal interface and processing webhook-driven shipment updates.

- Implemented semantic category search across 5,000+ categories using Elasticsearch and precomputed embeddings, enabling semantic matching beyond traditional keyword search.
- Built and deployed two Flutter mobile applications end-to-end, integrating authentication, backend APIs, business workflows, file handling, and production deployment.
- Implemented application security controls including JWT authentication, authorization, RBAC, password hashing, rate limiting, and administrator account lockout after repeated failed login attempts.

Client Project

Software Developer – School Management System

- Developed a production school management application using Laravel, implementing administrative and operational modules based on client business requirements.
- Designed REST APIs, authentication, database-driven business logic, and management interfaces supporting day-to-day school operations.

SELECTED PROJECTS

Distributed Microservices Platform | *Node.js, C#, gRPC, PostgreSQL, Redis, JetStream*

- Designed a distributed microservices architecture consisting of independently deployable services communicating through gRPC and asynchronous event-driven messaging.
- Implemented transactional workflows, idempotent message handling, retries, service boundaries, and failure handling for distributed operations.
- Applied Saga and Outbox patterns to coordinate multi-service workflows and maintain reliable event delivery across service boundaries.

Enterprise Real-Time Messaging Service | *Node.js, Socket.IO, Redis, JetStream, PostgreSQL*

- Designed a real-time messaging backbone connecting support agents, buyers, and sellers using Socket.IO, WebSockets, JWT authentication, role-scoped communication, and reconnect recovery.
- Implemented Redis-based queueing and distributed coordination for customer-agent assignment with concurrency safeguards and idempotent processing.
- Implemented event-driven message processing using JetStream, Redis caching, background workers, attachment handling, and operational controls.

Semantic Category Search | *Elasticsearch, Embeddings, Node.js*

- Implemented semantic search across 5,000+ product categories using precomputed embeddings and vector similarity techniques.
- Optimized retrieval by loading the embedding dataset into application memory during startup while using Elasticsearch for efficient search and indexing.

EDUCATION

University of the People, USA

Bachelor of Science in Computer Science – In Progress

Aptech Learning

Advanced Diploma in Computer Science (ADSE) – 3-Year Program

Completed

Higher Secondary Certificate (HSC)

Higher Secondary Education

Completed