

MARIJ HAMEED KHAN

Senior Software Engineer

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SUMMARY

Senior Software Engineer with 6+ years of experience across backend and full-stack development, distributed systems, cloud infrastructure, and agentic AI applications. Proven track record architecting and scaling production systems serving millions of users, leading technical vision, and mentoring engineering teams. Skilled across Java, Python, Scala, and JavaScript/TypeScript, with deep expertise in microservices, event-driven architecture, and cloud infrastructure (AWS, GCP). Recently focused on building and evaluating agentic AI systems using LangGraph, LangChain, and AI coding tools like Claude Code.

EXPERIENCE

Senior Software Engineer, AI Applications | Emumba (Extreme Networks Engagement)

Jan 2026 - Present | Islamabad, Pakistan

- Building and evaluating agentic AI applications for Extreme Networks, including a multi-agent LLM pipeline (LangGraph/LangChain on AWS Bedrock) that automates early-stage product planning, turning a raw product idea into a structured spec and then a full product requirements document.
- Designed and built a dependency-discovery agent that identifies and links internal and external dependencies for a given product initiative.
- Built an LLM evaluation suite using DeepEval and led the testing strategy (unit/integration/smoke) across the agent pipeline.
- Found and fixed a privilege-escalation gap in a production OpenSearch IAM policy, where a 'read-only' role's HTTP-verb-based permissions actually allowed write operations; rebuilt the Terraform-managed policy into scoped allow/deny rules.
- Built a ~1,100-line integration test suite against a live MCP-based LLM retrieval service on AWS serverless infrastructure (Lambda, DynamoDB, OpenSearch), including routing test traffic through a Kubernetes proxy to reach an IP-allowlisted endpoint.
- Hardened platform security and infrastructure: implemented AWS X-Ray transaction tracing, tightened IAM permissions for AgentCore, and introduced BlackDuck SCA scanning into CI.
- Built a batch evaluation runner for Extreme's AI Expert (EVA) chat API and an OAuth2 Authorization Code + PKCE SSO login flow.

Technologies: Python 3.12 (uv), LangGraph, LangChain, AWS Bedrock, AWS Bedrock AgentCore, AWS Lambda, DynamoDB, OpenSearch, Claude models, Claude Code, S3, Docker, Terraform, pytest, DeepEval, GitHub Actions, AWS X-Ray, BlackDuck.

Senior Software Engineer, Device Monitoring Platform | Emumba (Extreme Networks Engagement)

Oct 2024 - Dec 2025 | Islamabad, Pakistan

- Led architectural decisions for mission-critical device monitoring platform serving enterprise laptop fleets, setting technical vision and engineering standards for distributed systems team.
- Architected and developed performance-critical microservices using Java 17/Spring Boot, processing real-time telemetry from 10,000+ devices with 99.9% uptime and sub-100ms response times.
- Designed scalable data architecture integrating PostgreSQL for relational data, Elasticsearch for search/analytics, and Kafka and RabbitMQ for event streaming and asynchronous messaging, handling millions of transactions daily.
- Built VoIP/call-quality monitoring for a C#/.NET 8 Windows telemetry service, detecting active calls via audio-session monitoring (NAudio/WASAPI) and sampling latency, jitter, packet loss, and system metrics in real time, published over MQTT.
- Implemented JWT-based service-to-service authentication and exposed platform services through AWS API Gateway, storing time-series telemetry data in InfluxDB.
- Directed company-wide migration to clean architecture and domain-driven design, establishing coding standards and design patterns that reduced technical debt by 35% and improved maintainability.
- Built hybrid communication architecture using REST APIs and gRPC, optimizing inter-service communication and reducing latency by 40%.

Technologies: Java 17, C#, .NET 8, Spring Boot, PostgreSQL, Elasticsearch, Kafka, RabbitMQ, MQTT, JWT, AWS API Gateway, InfluxDB, gRPC, Kubernetes, AWS.

Software Engineer II | Upstart Commerce

Jan 2023 - Sep 2024 | Islamabad, Pakistan

- Architected high-performance eCommerce and payments microservices using Java and Scala with Akka framework, processing 500K+ transactions daily with strict SLA requirements.
- Led technical initiatives implementing event-driven CQRS architecture using Kafka, improving system scalability by 10x and enabling real-time data processing across multiple services.
- Migrated a fleet of microservices from Cassandra 3 to Cassandra 4 with zero downtime and zero data loss, replaying event history (including Kafka-based inter-service events for a non-event-sourced service) to rebuild state in the new schema before cutting over.
- Identified and resolved compliance challenges by implementing GDPR and CCPA compliance across event-driven microservices handling PII, using crypto shredding and Akka-GDPR to enable data erasure without breaking event sourcing guarantees.
- Contributed fixes and feature development to the TypeScript/Node.js backend of the eCommerce platform alongside primary Java/Scala service work.
- Optimized PostgreSQL database performance, reducing query times by 60% through advanced indexing, query optimization, and implementing Redis caching strategies.
- Conducted code reviews and mentored junior engineers on best practices, architectural patterns, and Scala/Java development, improving team code quality and accelerating onboarding.
- Established robust testing strategies including unit, integration, and performance tests, achieving 85% code coverage and maintaining 99.99% production uptime, with production deployments on Kubernetes/GCP monitored via Grafana and Prometheus.

Technologies: Java, Scala, TypeScript, Node.js, Akka, Akka-GDPR, Kafka, PostgreSQL, Redis, Cassandra, Docker, Kubernetes, GCP, OpenSearch, Grafana, Prometheus, Bitbucket.

Software Development Engineer | Upstart Commerce

Mar 2021 - Jan 2023 | Islamabad, Pakistan

- Designed and implemented comprehensive CI/CD pipelines using Bitbucket and Docker, transforming deployment process from weekly to daily releases with automated testing gates.
- Developed internal performance testing platform using Node.js and ReactJS, replacing commercial tools and enabling continuous performance monitoring.
- Built automated testing frameworks using JUnit with TDD practices, creating 500+ tests with parallelization that reduced CI execution time by 50%.

Technologies: Java, JavaScript, Node.js, ReactJS, JUnit, Cypress, JMeter, Docker, Bitbucket, REST APIs.

QA Engineer | Alachisoft

Dec 2019 - Feb 2021 | Islamabad, Pakistan

- Developed automation test suites and performance testing strategies in Java, Python, and C# for distributed caching systems, improving test coverage by 70%.
- Executed performance testing and system monitoring using Grafana and Prometheus for MySQL-based NCache SaaS deployments on AWS and Azure.

Technologies: Java, Python, C#, MySQL, AWS, Azure, Grafana, Prometheus, Selenium.

PROJECTS

Preference-Aware Travel RAG Assistant

Personal / GenAI Course Project

- Built a retrieval-augmented generation (RAG) assistant that provides personalized travel recommendations based on user preferences, leveraging vector search for context-aware responses.

Agentic Content Curation System

Personal / GenAI Course Project

- Developed an agentic AI system using LangChain and FastAPI that autonomously researches topics and generates high-quality LinkedIn post content through a multi-step agent pipeline.

CORE SKILLS

Languages: Java, Scala, Python, TypeScript, JavaScript, C#, SQL

Frameworks and Platforms: Spring Boot, Akka, .NET, Node.js, ReactJS, FastAPI, LangChain, LangGraph

RDBMS: PostgreSQL, MySQL, SQL Server

NoSQL and Messaging: Kafka, RabbitMQ, Cassandra, Redis, Elasticsearch, DynamoDB, OpenSearch

Cloud and DevOps: AWS, GCP, Kubernetes, Docker, Terraform, CI/CD, GitHub Actions, Bitbucket, AWS X-Ray

Architecture: Microservices, Event-Driven Architecture, CQRS, DDD, Clean Architecture, Performance Optimization

Security and Compliance: JWT, OAuth2/PKCE, GDPR/CCPA Compliance, BlackDuck SCA, IAM Hardening

AI and ML: Claude Code, Claude Models, RAG Pipelines, Agentic AI Systems (LangGraph/LangChain), AWS Bedrock, LLM Evaluation (DeepEval)

Monitoring and Tools: Grafana, Prometheus, OpenAPI, REST, gRPC, pytest

Leadership: Technical Vision Setting, Architectural Decisions, Engineering Standards, Mentoring, Cross-functional Collaboration

EDUCATION

Bachelor of Science in Computer Science | Bahria University

2015 - 2019