AHMAD SALEH

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Backend Software Engineer

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WORK EXPERIENCE

Backend Software Engineer (C)

ProGineer Technologies

August 2022 - Present
Ramallah, Palestine

- Develop and maintain backend services written in C for production systems, focusing on performance-critical and memory-sensitive components
- Contributed to 5+ major projects and numerous bug fixes, working within a team of 20 engineers to deliver enterprise solutions
- Optimize database queries and system performance, achieving significant improvements in execution times through query tuning, index optimization, and performance analysis
- Streamlined critical database query that was taking ~2 hours to execute, reducing execution time to 1-4 seconds (99.9% improvement) through query restructuring, index optimization, and execution plan analysis
- Reduced query execution time from 50 minutes to 3-5 seconds (99.8% improvement) by improving join operations, adding strategic indexes, and refactoring the query structure for better performance
- Optimized Cassandra API using parallelism, reducing total execution time from 26 seconds to 6 seconds for 10,000 executions (77% improvement)
- Work with databases containing millions of records, managing 100+ tables across multiple schemas and collaborating on designing 20 new tables for 2 major projects
- Resolved 10-15+ production incidents and performance enhancements, including successful on-premises performance optimization for Asian customer that resulted in high satisfaction
- Handle production issues and system debugging in challenging environments, including on-premises deployments with no cloud access, requiring deep system-level analysis
- Work with Cassandra NoSQL systems for distributed data modeling, focusing on scalability and availability
- Collaborate with cross-functional engineering teams on backend design and system behavior decisions

Technologies:

C | Oracle SQL | Cassandra NoSQL | Informix

Personal Project: Bloom – Venue Booking Platform

View on GitHub →

Problem:

Venue booking platforms need to handle complex reservation logic (full-day, time-based, event-based), ensure data consistency across concurrent bookings, and provide secure multi-tenant access with role-based permissions.

Solution:

Built a production-ready Spring Boot REST API with clean layered architecture, implementing robust booking workflows, JWT authentication with refresh tokens, and database-driven multi-language support. Established generic ownership validation and global exception handling for maintainability.

My Role & Responsibilities:

- Architected and executed the entire backend system using clean architecture principles (Controllers → Services → Repositories)
- Created and applied JWT-based authentication system with refresh token rotation and role-based access control
- Built generic ownership validation framework ensuring users can only modify their own resources
- Planned MongoDB schemas improved for booking queries with proper indexing strategies
- Applied multi-language support system with database-driven translations (EN/AR/HE)
- Deployed and configured backend on AWS EC2 with production-ready setup
- Incorporated AWS S3 for media storage and OpenAI API for chatbot functionality

Architecture & Backend Decisions:

Layered architecture with separation of concerns: REST controllers handle HTTP requests, service layer contains business logic, repository layer manages data access. Utilized global exception handling, request validation, and comprehensive API documentation. Used MongoDB for flexible schema design supporting multiple booking models.

Impact:

Successfully handles complex booking scenarios with data consistency guarantees. Supports concurrent bookings without conflicts, and provides secure multi-tenant access. System demonstrates production-ready patterns suitable for scaling.

Technologies:

Backend:

Java, Spring Boot, Spring Security

Database:

MongoDB

Infrastructure:

AWS EC2, AWS S3

Integration:

Firebase, OpenAI API

Documentation:

Swagger/OpenAPI

SUMMARY

Professional Summary: Backend software engineer with 4 years of experience, working at ProGineer Technologies. Focus on building and maintaining high-performance backend systems, contributing to system stability, efficiency, and correctness. Experience developing web applications with Spring Framework, building RESTful APIs, and applying secure authentication systems. Strong hands-on experience with Oracle, Cassandra, and MongoDB databases, including data modeling, query optimization, performance tuning, and working with large-scale production datasets. Background rooted in real enterprise systems—long-lived codebases, strict requirements, production incidents, and collaboration with cross-functional engineering teams. Focus on reliability, maintainability, and correctness rather than demos or experimental projects.

TECHNICAL SKILLS

Core Backend

C, C++, Java, Memory Management, Performance Optimization

Databases

Oracle SQL, Cassandra NoSQL, MongoDB, MySQL, Data Modeling, Query Optimization

Backend Frameworks

Spring Boot, Spring Security, JPA/Hibernate, RESTful APIs

Cloud & Infrastructure

AWS EC2, AWS S3, Linux, Deployment, System Architecture

DevOps & Tools

Maven, Git, Production Debugging, Log Analysis, System Design

LANGUAGES

Arabic	NATIVE
English	FLUENT

CONTINUOUS LEARNING

Focus Areas:

- Advanced Database Optimization
- Microservices Architecture
- System Performance Tuning

Technologies:

- Cloud Platforms
- Container Orchestration
- Advanced SQL Techniques

EDUCATION

Bachelor of Computer Science

An-Najah National University

2018 - 2022, Nablus, Palestine

GPA: 3.0/4.0

PROJECTS

Mentoring System

Graduation Project

Problem:

University students need effective mentor matching based on skills, career goals, and mentor expertise, with a system to track mentorship progress and task completion.

Solution:

Initiated a full-stack mentorship platform with intelligent recommendation algorithm that analyzes multiple factors to generate optimal mentor-student matches, along with comprehensive task management and progress tracking capabilities.

Key Responsibilities:

- Planned and performed recommendation algorithm using skill-based matching and career goal analysis
- Built RESTful APIs for mentor-student matching, task management, and progress tracking
- Enhanced secure authentication and authorization system with Spring Security
- Established database schema improved for recommendation queries
- Merged with university systems for student data synchronization

Architecture:

Traditional MVC architecture with Spring Framework. Service layer implements recommendation algorithm, repository layer uses JPA for data persistence. RESTful API design with clear separation between matching logic and task management.

Impact:

Successfully matches students with relevant mentors based on multiple criteria. Task management system enables structured mentorship programs with measurable outcomes.

Technologies:

Backend:

Java, Spring Framework, Spring Security

Database:

JPA/Hibernate, MySQL

Frontend:

HTML, CSS, Bootstrap