Musab Bin Zafar

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Experience

Haemimont AD June 2025 – Present

.Net Engineer *Sofia, Bulgaria (Remote)*

- Implemented backend features and bug fixes as part of Generali's FinTech modernization project, contributing to the integration of CatMap with Moody's IRP on AWS.
- Collaborated with a 9-member backend team to deliver project milestones and support integration features for Astea Solutions and Generali Group.
- Contributed to backend development of web applications using C#, .NET Framework, Entity Framework, Angular, and SQL Server.
- Assisted in requirement analysis and collaborated with senior developers during client discussions to align on deliverables.
- Improved system performance by optimizing SQL queries and refactoring core backend modules.

Java & Scala Engineer

- Worked with multi-build architecture to configure and maintain project dependencies and automated tests.
- Learn Scala and Functional Design Principle.
- Implemented Scala-based test cases to improve test coverage and reliability.
- Used Akka to build scalable, stateful services requiring low-latency processing.
- Used Spring Boot and Java to implement a centralized localization system for application-wide language support.
- Applied functional design principles and SOLID design principles to develop systems using both functional and object-oriented programming models.

Generali Group (via Haemimont AD) Oct 2025 - Present

Software Engineer *(Remote)*

- Drove the integration of Moody's Intelligent Risk Platform (IRP) into Generali's internal CatMap system.
- Designed and maintained the integration architecture enabling smooth interaction between CatMap, DataBridge, and IRP APIs.
- Collaborated directly with Generali stakeholders and international teams (Haemimont, Astea Solutions) to align technical solutions with business needs.
- Developed expertise in catastrophe risk modeling and insurance data workflows.
- Applied DRY and SOLID principles while optimizing SQL queries for high-volume datasets.
- Designed and implemented REST APIs for large-scale data processing.

Teladoc Health (via Haemimont AD) june 2025 – Oct 2025

Software Engineer *(Remote)*

- Write automated tests to ensure code remains high quality throughout its life cycle.
- Ensure SBT's structure complies with the requirements of the Structure
- Figure out what the infrastructure dependencies are and what the needed configuration is for the environment variables.
- Ensured clarity in communication and ease of integration by maintaining up-to-date API documentation using Swagger and Postman

Winning Solutions jan 2025 – July 2025

Software Engineer *(Remote)*

- Developed reactive backend services using Kotlin, Spring Boot 6, Spring WebFlux, Spring Data R2DBC, Jakarta Validation, Redis, JUnit, MockK, and GitHub.
- Modeled the database using Domain-Driven Design aggregates to ensure transactional consistency aligned with business logic.
- Implemented custom ORM-style mappings for aggregates since Spring Data R2DBC does not provide full ORM capabilities.
- Applied backend best practices including controller naming conventions, parameter validation, centralized exception handling, coherent DTO design, and proper transaction isolation in the service layer.

- Implemented coroutine-based suspended functions for custom repository methods to support non-blocking reactive data access.
- Followed Test-Driven Development (TDD) practices and wrote extensive unit and integration tests for repository, service, and controller layers using JUnit.
- Integrated Redis caching at the service layer to improve data retrieval efficiency, reduce latency, and enhance application scalability.
- Migrated an existing application from Java Spring Data JDBC to Kotlin Spring Data R2DBC to enable reactive, non-blocking database operations.

Freelancer June 2024 – Dec 2025

Full Stack Developer *(Remote)*

- Modeled the database using Domain-Driven Design aggregates to maintain transactional consistency aligned with business logic.
- Built RESTful APIs using Spring Boot and implemented eCommerce features such as category management, shopping carts, and payment workflows.
- Worked with JPA, PostgreSQL, and Lombok to manage database interactions and reduce boilerplate code.
- Implemented input validation, pagination, sorting, and managed complex entity relationships within the application.
- Secured applications using Spring Security with JWT-based authentication and custom authorization logic.
- Implemented caching strategies, ensured transactional consistency, and optimized advanced database operations.
- Applied backend best practices including standardized controller design, parameter validation, centralized exception handling, coherent DTOs, and proper transaction isolation in the mapper and service layers.
- Followed Test-Driven Development (TDD) practices and wrote extensive unit and integration tests for repository, service, and controller layers using JUnit to ensure system reliability.

Projects

Smart Guardian: Attendance and Tracking System GitHub Repo

- Designed and implemented one-to-many and many-to-one entity relationships ensuring referential integrity, optimized queries, and proper cascading and fetching strategies using Spring Data JPA.
- Implemented validation, pagination, sorting, and managed complex entity relationships to ensure efficient data handling and maintainable APIs.
- Secured applications using Spring Security with JWT-based authentication and custom authorization mechanisms.
- Applied backend best practices including standardized controller design, parameter validation, centralized exception handling, coherent DTOs, and proper transaction isolation across mapper and service layers.
- Integrated WebSocket communication in Spring Boot to enable real-time client–server updates, improving responsiveness and user experience.
- Developed custom exception handling and validation mechanisms in controllers to improve error management and provide meaningful feedback to users.
- Implemented dynamic CRUD functionality driven by JSON configuration files, enabling flexible form generation, validation, and API integration while reducing frontend redundancy.
- Built a scalable web application using Next.js with server-side rendering (SSR) to improve SEO and initial load performance.
- Implemented real-time frontend updates using WebSocket integration with `@stomp/stompjs` and `sockjs-client`.
- Integrated Google Maps using `@react-google-maps/api` for location-based features and secured forms with `react-google-recaptcha`.

Real-Time Chat Application (NestJS + React + GraphQL) GitHub Repo

- Designed and developed a scalable full-stack real-time messaging application using **NestJS** for the backend and **React** for the frontend.
- Built a **GraphQL API** to handle CRUD operations with efficient data retrieval and management using **MongoDB**.
- Implemented real-time messaging using **GraphQL WebSocket Subscriptions** to enable seamless communication between users.
- Secured application endpoints using **JWT-based authentication** across both backend and frontend services.
- Designed a responsive UI using **Material UI** to provide a consistent and user-friendly experience.
- Managed application state and API caching using **Apollo Client** for smooth interactions with the GraphQL API.
- Implemented **server-side pagination and infinite scrolling** to efficiently handle large chat datasets.
- Integrated **Redis Pub/Sub** for message distribution, enabling horizontal scalability of real-time messaging.
- Configured **React Router** for dynamic client-side routing and smooth navigation.
- Implemented media upload functionality using **Amazon S3** for scalable file storage and sharing.

Skills

Languages: Java, Kotlin, Reactive Programming, Python, C#, JavaScript, TypeScript, SQL
Frameworks & Libraries: ReactJS, Spring Boot, .NET, NestJS, NumPy, Django
DevOps & Platforms: Docker, Kubernetes
Databases: MySQL, PostgreSQL
Tools & OS: Git, GitHub, Linux
Architecture: Domain Driven Design (DDD), Test Driven Development (TDD), Event Driven Architecture

Certifications

Spring WebFlux Masterclass: Reactive Microservices | *Udemy* Issued 2024

- Learned to build scalable and responsive applications using Spring WebFlux and reactive programming principles.
- Worked with R2DBC for reactive data access, reactive controllers, WebClient for API consumption, and advanced performance optimizations such as HTTP/2 and Gzip.
- Implemented integration testing using WebTestClient for validating reactive applications.

Reactive Applications with Spring WebFlux Framework | *Udemy* Issued 2024

- Learned reactive programming concepts and differences from imperative programming.
- Built non-blocking Spring WebFlux applications and reactive RESTful APIs.
- Implemented Spring Security with JWT-based authentication and authorization.
- Optimized database interactions using pagination and reactive data pipelines.

Docker Training Course for the Absolute Beginner | *KodeKloud* Issued Feb 2025
Learning Linux Basics Course & Labs | *KodeKloud* Issued Feb 2025
Kotlin Essential Training: Object-Oriented and Async Code | *LinkedIn Learning* Issued Oct 2024
Kubernetes for the Absolute Beginners - Hands-on Tutorial | *KodeKloud* Issued Jun 2024
DevOps Pre-Requisite Course | *KodeKloud* Issued Jun 2024
GIT for Beginners | *KodeKloud* Issued Jun 2024
Shell Scripts for Beginners | *KodeKloud* Issued Jun 2024
Linode: Kubernetes Engine | *KodeKloud* Issued Jun 2024
Data Science & Machine Learning Course | *Dicecamp* Issued Jun 2025

Education

Shaheed Zulfikar Ali Bhutto Institute of Science and Technology (SZABIST) June 2025
Bachelor of Science, Computer Science (BSCS) *SZABIST-Islamabad*