

IBRAHIM MUHAMMAD

BACKEND DEVELOPER

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Professional Profile

Results-driven Backend Developer with 4+ years of experience in architecting and delivering scalable, high-performance backend solutions across diverse industries. Proficient in **Node.js**, **TypeScript**, **NestJS**, **PostgreSQL**, and **MongoDB**, with a strong command of **microservices architecture**, system optimization, and algorithm design. Demonstrated expertise in building secure, maintainable RESTful APIs, implementing **authentication/authorization** systems, and leveraging tools like **Redis**, **RabbitMQ**, and **Prisma ORM** to enhance application performance. Adept at translating complex business requirements into efficient technical solutions, collaborating with cross-functional teams, and driving innovation through best practices and emerging technologies. Passionate about solving challenging problems, mentoring others, and contributing to impactful, real-world projects.

Career Highlight

- Designed and implemented **scalable backend services** capable of handling **large volumes of data** efficiently, with a strong focus on **performance optimization**, **reliability**, and **high availability**.
- Developed and maintained **RESTful APIs** that seamlessly integrated with frontend applications, contributing to a **smooth user experience** and robust system architecture.
- Architected and deployed **microservices** to modularize application components, enabling **easier scalability**, **faster development cycles**, and **improved maintainability**.
- Worked extensively with both **SQL (PostgreSQL)** and **NoSQL (MongoDB, Redis)** databases, optimizing **data retrieval**, **caching**, and **storage** for high-performance applications.
- Implemented and managed **multi-tenant systems**, ensuring **data isolation**, **security**, and **resource optimization** across different client environments.

- Applied **AI and machine learning techniques** to build **predictive models** and **intelligent systems**, leveraging **AI agents** to drive automation and enhance user interactions.
- Led various **system optimization efforts**, including query tuning, caching strategies, and asynchronous processing with **Redis** and **RabbitMQ**, significantly improving system responsiveness and throughput.
- Built **secure authentication and authorization systems** using **Passport.js**, incorporating **OAuth 2.0**, **JWT**, and **RBAC** to protect sensitive data and ensure controlled access.
- Consistently applied **security best practices**, including **data encryption**, **session management**, and API-level guards, to maintain the integrity and confidentiality of systems.

Skills

Backend Development:

Node.js | TypeScript | NestJS | RESTful API Development | Server-Side Development | Microservices Architecture | API Documentation (Swagger)

Database Technologies:

PostgreSQL | MongoDB | Redis | SQL & NoSQL Databases | Prisma ORM | Mongoose ORM | Database Optimization

Messaging & Queues:

RabbitMQ | Asynchronous Processing | Event-Driven Architecture.

Authentication & Security:

Passport.js | OAuth 2.0 | JWT | Role-Based Access Control (RBAC) | Authentication & Authorization | Security Best Practices | Data Encryption | API Guards | Multi-Tenant Architecture

DevOps & Deployment:

CI/CD Pipelines | Docker | Containerization | Version Control (Git)

Performance & Scalability:

System Architecture Design | Scalability & Performance Optimization | Caching Strategies | System Monitoring & Optimization.

AI & Machine Learning:

AI Agents | Predictive Modeling | Model Deployment | Real-time Data Processing.

Testing & Quality Assurance:

Automated Testing | Test-Driven Development (TDD)

Tools & Technologies

Backend & Development Tools:

Node.js | Visual Studio Code | Postman | Swagger

Databases & Caching:

PostgreSQL | MongoDB | SQL Databases | NoSQL Databases | Redis | ElasticSearch

Messaging & Queuing:
RabbitMQ

Version Control Containerization & CI/CD:
Git | GitHub | GitHub Actions | Docker | CircleCI | GitHub Actions

Professional Experience

Nigerian Startup Portal (NSP) *April 2024 – Present*

- Engineered and maintained the backend of a scalable, high-performance web application using **NestJS (Node.js)** with **PostgreSQL** and **Prisma ORM**, ensuring efficient and secure data management across modules.
- Set up and optimized a microservices architecture with **RabbitMQ**, enabling efficient, asynchronous communication between services and improving overall system scalability and fault tolerance.
- Integrated **Redis caching** to accelerate data retrieval, significantly reducing API response times and enhancing user experience during high-traffic operations.
- Designed and implemented **RESTful APIs** for seamless data exchange between backend services and frontend interfaces, ensuring reliability and performance across user interactions.
- Built a robust **Role-Based Access Control (RBAC)** system, enforcing fine-grained permissions and ensuring secure, role-specific access to features and resources.
- Led the development of critical modules, including User Registration for all user types, Labelling Features, and a comprehensive Ticketing System, while also contributing to feature development and optimization in other core modules.
- Collaborated with cross-functional teams to ensure streamlined **CI/CD** pipelines, containerized deployments via Docker, and high system uptime with proactive monitoring and issue resolution.

CYNEGIEhr Solution

November 2023 – March 2024

- Developed and deployed the backend architecture for a **multi-tenant HR management platform** using **NestJS (Node.js)**, with **Mongoose** and **TypeORM** integrated into **MongoDB** for efficient, scalable, and secure data handling across tenant organizations.
- Designed and implemented **modular, scalable RESTful APIs** supporting core HR functionalities, including **Employee Management**, **Device Management**, **Attendance Tracking**, **Leave Management**, and **Performance Management**, delivering a seamless experience tailored to diverse client requirements.
- Engineered robust **authentication and authorization** layers using **JWT** and **OAuth 2.0**, ensuring secure, role-based access and tenant-level data isolation through a **shared-database architecture with tenant ID segregation**.
- Optimized system performance by fine-tuning **database queries and indexing strategies**, enabling fast, reliable data retrieval even under high concurrency.
- Integrated **real-time notification systems** and **interactive reporting dashboards**, empowering HR teams with actionable insights and enhanced operational efficiency.
- Employed **Docker** for containerization and implemented **CI/CD pipelines**, streamlining deployments and maintaining high system availability and reliability.

Tech Atlas

April 2024 – Jan 2025

- Led the entire backend development, designing scalable APIs and modular microservices tailored to handle large datasets and multiple user roles efficiently.
- Utilized **PostgreSQL** with **Prisma ORM** for robust, type-safe database operations, ensuring optimal data consistency and performance.
- Developed secure authentication and authorization systems using Passport.js, implementing strategies like OAuth 2.0 and JWT, along with role-based access control (RBAC) to manage permissions across different user tiers.
- Implemented custom guards in NestJS to enforce access policies at the route level, enhancing API security and ensuring only authorized users could access specific resources.
- Documented all APIs with Swagger, facilitating seamless collaboration between development teams and ensuring clear, accessible API usage for external integrations.
- Optimized backend performance through efficient query handling, indexing strategies, and strategic caching where needed, enabling the system to handle high traffic with minimal latency.
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Bolle Insurance

April 2024 – Jan 2025

- Engineered a **multi-provider insurance API platform** for **Leadway** and **Allianz**, enabling users to obtain travel insurance quotations and issue policies seamlessly via a centralized backend built with **NestJS** and the **HTTP Module**.
- Implemented a **dynamic package path system** to support diverse insurance products (e.g., individual and family travel policies), with scalable configuration for both **quotation** and **policy issuance** workflows.
- Utilized **DTO-based validation** (**class-validator**, **class-transformer**) to ensure data accuracy and integrity before external API requests, reducing integration errors.
- Developed secure **OAuth 2.0 password grant authentication** for Allianz endpoints, including real-time token generation and dynamic authorization headers.
- Designed **centralized endpoint resolution** logic, dynamically selecting URLs and validators based on package paths for maintainability and ease of expansion.
- Integrated **comprehensive error handling and logging**, enhancing system reliability, observability, and simplifying issue resolution.
- Standardized external API interactions through a **uniform response interface**, ensuring consistent behavior across insurance providers and simplifying downstream processing.

Project SEED (Orphan Management System)

Dec 2022 – Feb 2023

- Designed and developed the **entire orphan management solution** from the ground up, including core modules for **orphan registration**, **sponsor engagement**, and **guardian management**.
- Architected a robust **security framework**, implementing **role-based access control (RBAC)**, and **secure session management** to safeguard sensitive user data.
- Built a **scalable backend infrastructure** using **NestJS** and **PostgreSQL**, ensuring efficient data handling, modularity, and ease of maintenance.
- Developed secure, RESTful APIs for key functionalities such as **orphan enrollment**, **sponsorship tracking**, and **resource allocation**, facilitating seamless system interactions.

- Integrated **real-time notifications** and **messaging features** to enhance communication between sponsors, guardians, and administrators.
- Deployed comprehensive **logging and monitoring tools**, improving system reliability, enabling proactive anomaly detection, and supporting rapid issue resolution.

Fish Pond Monitoring System

Mar 2022 – Dec 2022

- Spearheaded the **integration of software and IoT hardware components**, including microcontrollers, Wi-Fi modules, and water quality sensors, ensuring real-time environmental monitoring for aquaculture systems.
- Developed and configured firmware to enable seamless data transmission between hardware devices and the software platform, enhancing system reliability and responsiveness.
- Leveraged **Firebase** for real-time data storage, retrieval, and synchronization, improving application performance and ensuring consistent monitoring across devices.
- Implemented **predictive modeling algorithms** to analyze sensor data and forecast water quality fluctuations, enabling proactive management of pond resources.
- Built automated **real-time alert systems** to notify fish farmers of critical changes in water parameters, minimizing risks and optimizing fish health and yield.
- Collaborated with a cross-functional team during the **product development lifecycle**, contributing to both **hardware prototyping** and **software application development** for end-to-end solution delivery.

Education & Certifications

Education

Sule Lamido University, Kafin-Hausa — *Jigawa State, Nigeria*

Bachelor of Science (B.Sc.) in Computer Science

Grade: 4.92 / 5.00

2018 – 2023

Blessed Academy, Kaduna — *Kaduna, Nigeria*

Senior Secondary School Certificate (SSCE)

2010 – 2016

Certifications & Honors

- **Advanced Data Science**
Certificate of Recognition – Sule Lamido University
- **Certified Data Analyst**
Hiit Plc, Kano
- **Outstanding Data Scientist**
Certificate of Recognition – Department of Computer Science, Sule Lamido University
- **Overall Best Graduating Student**
Sule Lamido University, Class of 2023
- **Lead Solution Developer, Kattis Challenge 2022**

*Honored for securing **2nd position** in competitive programming and problem-solving at **Kattis 2022, South Africa.***

Leadership Roles & Involvement

- Pioneer President, Faculty Association
Nigeria Association of Computing Students (SLUK Chapter)
- Academic Committee Chairman Muslim Student's Society of Nigeria (SLUK Chapter)

Volunteering Experience

Volunteering Experience

- **Mentor to Interns and NYSC Corp Members**
Sule Lamido University & Local Tech Communities
Provided technical mentorship and career guidance to student interns and youth corps members, helping them navigate backend development, database design, and software best practices. Fostered growth through code reviews, workshops, and project-based learning.
- **Contributor to Open-Source Projects**
GitHub & Global Developer Communities
Actively contributed to free and open-source software (FOSS) projects, collaborating with global teams on tools ranging from backend APIs to DevOps automation. Enhanced system features, fixed bugs, and improved documentation for community-driven solutions.
- **Technical Volunteer, Local Hackathons & Code Camps**
- *Facilitator & Judge*
Participated in organizing coding competitions and workshops for aspiring developers. Delivered sessions on backend architecture, API development, AI fundamentals, and career roadmaps in tech. Evaluated projects based on scalability, innovation, and real-world impact, while mentoring participants on project planning and best practices.
- **Community Engagement in Digital Health Advocacy**
Hadejia Digital Health Advocates
Supported initiatives aimed at leveraging technology for improved healthcare outcomes. Contributed technical insights to digital health mapping tools and data visualization projects.