

MUHAMMAD ANAS

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SKILLS

Languages	Python, JavaScript, TypeScript, Java, C++, SQL
Frontend	HTML5, CSS3, React.js, Next.js
Backend	Node.js, NestJS, Django, FastAPI, RESTful APIs, GraphQL
Databases	MongoDB, PostgreSQL, MySQL, Redis, Oracle SQL
DevOps & Cloud	Docker, Kubernetes, AWS, Azure, CI/CD Pipelines
Tools & Platforms	Git, GitHub, Postman, Swagger, MS Office
AI/ML & NLP	Generative AI, LLMs, PyTorch, LangChain, RAG Systems, Prompt Engineering
Testing	Jest, Playwright, Cypress, Unit Testing, Integration Testing, E2E Testing, TDD
Workflow	Clean Code, System Design, Performance Optimization, Agile, Scrum, Jira, Confluence
Languages Spoken	English [C1], German [A1] (Actively learning)

EXPERIENCE

Associate Software Engineer [Full time]

BariTechSol

Karachi, Pakistan

Jun 2024 – Sep 2024

- **Engineered** Docker-based TypeScript modules that integrate seamlessly with multiple carrier APIs, reinforced by Jest test suites and resilient auto-retry/error-handling logic.
- **Architected** an end-to-end automated test framework and CI workflows that continuously validate every critical service, with clear documentation to accelerate future development.

Full Stack Software Engineer [Full time]

WorkSpin

Karachi, Pakistan

July 2023 – May 2024

- Designed and implemented a scalable Node.js backend for real-time event applications, integrating OAuth/JWT authentication, WebSocket communication, and rate-limited, sanitized APIs. Supported over **40,000 concurrent users** with zero downtime.
- Improved backend performance by optimizing CI/CD pipelines, redesigning MongoDB schemas, applying indexing strategies, and introducing Redis caching. Achieved a **70% reduction in query latency** and a **50% decrease in peak database load**.
- Developed and deployed a comprehensive gym management backend with secure authentication, dynamic CMS, scheduling, fitness and nutrition APIs, and automated notifications via webhooks and cron jobs.

PROJECTS

- **InsightQI** (Next.js, LangChain, NestJS, MongoDB): Built an AI-driven web application enabling users to interact with SQL databases using natural language. Utilized LangChain's SQL Agent with OpenAI GPT to parse inputs and auto-generate SQL commands through a NestJS backend. Added MongoDB for session and query log storage. Achieved a 3x reduction in query formulation time via benchmark testing.
- **bugSage** – AI Debugging Assistant (Next.js, FastAPI, Pinecone, Groq, RAG, SQLAlchemy): Developed an AI-powered chatbot specifically designed to assist developers in debugging Express.js applications. Integrated Retrieval Augmented Generation (RAG) technology to create a context-aware knowledge base, enabling the chatbot to deliver precise and efficient solutions for both common and intricate debugging challenges.
- **EcoDriveHub** – Dynamic Data Handling Platform (React.js, Express.js, Mongoose ODM): Developed a system for seamless CSV file uploads, automatic schema generation, and dynamic data processing. Implemented RESTful APIs to support efficient search and filtering of dynamically generated data, integrated React AG Grid for building interactive and dynamic tables, and optimized database state management with hash-based change detection to ensure high performance and data consistency.
- **Boardddd** – Team Collaboration Platform (Node.js, Express, Socket.IO, MongoDB, AWS EC2, Docker): Designed backend architecture for a collaborative productivity tool with real-time group chat, role-based channel management, and activity monitoring via Socket.IO. Enabled secure file sharing, email-triggered invites, and dynamic form creation with user tracking. Managed Docker-based CI/CD deployment on AWS EC2 for seamless updates and scaling.

EDUCATION

University of Passau

MSc in Computer Science

Passau, Germany

Oct 2024 – Present

National University of Computer And Emerging Sciences (FAST-NUCES)

BS in Software Engineering

Karachi, Pakistan

Aug 2020 – Jun 2024