

MUHAMMAD HASSAN

Full-Stack Web Developer

Islamabad, Pakistan | muhammadhassan2326@gmail.com | +92 311 527433

[Portfolio](#) | [GitHub](#) | [LinkedIn](#)

Professional Summary

Results-driven **Full-Stack Developer** with expertise in building scalable web applications, real-time collaboration engines, and production-ready SaaS platforms. Proven track record in architecting modern microservices and front-end architectures using **React**, **Next.js**, **Node.js**, **TypeScript**, and **Python**. Experienced in containerizing applications with Docker, designing robust REST APIs, and optimizing database performance.

Technical Skills

Languages: TypeScript, JavaScript (ES6+), Python, HTML5, CSS3, C++, SQL

Frontend: React.js, Next.js, Tailwind CSS, Monaco Editor, Vite, Redux/Context API

Backend & APIs: Node.js, Express.js, NestJS, RESTful APIs, Flask, WebSockets (Socket.IO)

Databases: MongoDB (Mongoose), Oracle SQL 19c, PostgreSQL

DevOps & Tools: Docker, Git, GitHub, Postman, Vercel, Gunicorn, Zod, Linux

Featured Projects

FakeScope — AI Fake News Detection | *Python, Flask, Scikit-Learn, Docker, React*

- Engineered an NLP machine learning pipeline using Scikit-Learn and TF-IDF to detect linguistic fake news patterns.
- Developed a Flask backend with rate-limited REST APIs, input validation, and structured error handling.
- Containerized platform using Docker and Gunicorn with automated model training initialization on launch.

Relay — Real-Time Collaborative Code Editor | *TypeScript, React, Node.js, Socket.IO, Yjs, MongoDB, Docker*

- Built a real-time editor using Monaco Editor and Yjs CRDTs for conflict-free state synchronization and live cursor tracking.
- Developed an Express & Socket.IO server handling room presence awareness and debounced MongoDB persistence.
- Styled responsive UI with Tailwind CSS and containerized full-stack architecture using Docker.

Automated PDF Policy Data Extraction Tool | *Node.js, Express, MongoDB, JavaScript*

- Architected a backend search and parsing tool to extract structured data from high-volume PDF policy documents.
- Optimized database indexing in MongoDB, significantly reducing document processing lookup times.

SkyLine Transit System | *Blazor, .NET, SQL, C#*

- Designed a transport booking platform with seat reservation logic and route management systems.
- Implemented relational database schemas in SQL for real-time schedule tracking and user management.

Work Experience

Full-Stack Developer (Freelance) | *Remote*

02/2025 – Present

- Architected custom web applications, MVPs, and admin dashboards for clients using MERN stack and Next.js.
- Integrated third-party APIs, implemented JWT authentication, and optimized database queries for high scalability.
- Resolved performance bottlenecks and refactored legacy codebases to improve application maintainability.

Education

Bachelor of Science in Computer Science

Air University, Islamabad, Pakistan

Languages

English: Professional / Fluent | **Urdu:** Native