

Bilal Pasha

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PROFESSIONAL SUMMARY

Full-Stack Software Engineer with 2+ years of experience building scalable web applications and AI-powered systems using JavaScript and TypeScript ecosystems. Proven expertise in React, Next.js, Node.js, NestJS, and cloud infrastructure (AWS EC2, Docker, CI/CD). Experienced in RAG systems, vector databases, Elasticsearch, and LLM integrations. Adept at delivering production-grade solutions with clean architecture, security best practices, and measurable performance improvements.

TECHNICAL SKILLS

Languages: JavaScript (ES6+), TypeScript

Frontend: React.js, Next.js, Angular, Astro, Redux / Redux Toolkit, React Query (TanStack), Axios, React Hook Form, Zod, Formik

Backend & Frameworks: Node.js, Express.js, NestJS, REST APIs, JWT Authentication, Passport.js, BullMQ, Swagger

Databases: PostgreSQL, MySQL, MongoDB, Firestore, Qdrant (Vector DB), Pinecone (Vector DB), Elasticsearch

AI / ML: LangChain, RAG (Retrieval-Augmented Generation), LLM API Integration (DeepInfra), Vector Embeddings, Chroma Print

UI Libraries: Tailwind CSS, Shadcn/UI, Material UI, Ant Design, Chakra UI, Highcharts, Recharts, Chart.js, D3.js

ORM / Validation: TypeORM, Prisma, class-validator, class-transformer

DevOps & Cloud: AWS EC2, Docker, GitHub Actions (CI/CD), Vercel, Netlify, SSH/SCP, MakeFile

State Management: Redux, Jotai, Zustand

Tools: Git, Jira, Postman, Cursor IDE, SendGrid, Amazon S3, MinIO, Firebase Auth, NextAuth

Non-Technical: Project Management, Agile/Scrum, Cross-Functional Collaboration, Technical Documentation, Problem Solving

PROFESSIONAL EXPERIENCE

Software Engineer

May 2023 – Present

Techwards

Karachi, Pakistan

- Architected and shipped SEO-optimized Next.js websites with dynamic pages, automated sitemaps, and robots.txt configuration, improving search engine visibility and organic discoverability.
- Designed and deployed production-ready applications on AWS EC2 with Docker containerization and GitHub Actions CI/CD pipelines, reducing deployment time and improving release reliability.
- Implemented secure remote data migrations between production servers using SSH/SCP protocols, ensuring zero data loss and maintaining system integrity during transitions.
- Integrated DockerHub with AWS EC2 to enable automated image pulls without SSH key dependency, streamlining the deployment workflow for the engineering team.
- Led full-stack development across 4+ professional projects spanning Hotel Management, Document Search, Book Platform, and Media Website, collaborating with cross-functional teams.
- Built custom JWT-based authentication systems and Role-Based Access Control (RBAC) across multiple platforms, strengthening security posture and protecting sensitive user data.
- Integrated Amazon S3 pre-signed URL functionality with validation logic for secure file and recording uploads, preventing unauthorized access and improving upload performance.
- Developed duplicate recording detection using file fingerprinting (chromaprint), eliminating redundant uploads and reducing storage overhead.
- Implemented BullMQ message queue to handle high-traffic network requests efficiently, improving system throughput under load.
- Enabled multilingual localization with next-intl, expanding platform accessibility to global users across multiple languages.

Web Developer Intern

January 2023 – May 2023

HAT Incorporation

Karachi, Pakistan

- Developed responsive web applications using HTML5, CSS3, and JavaScript, collaborating with designers to deliver pixel-perfect, accessible user interfaces.
- Participated in code reviews, sprint planning, and team discussions, contributing to improvements in code quality and project delivery timelines.

PROJECTS

Book Reading & Revival Culture Platform | *Next.js, TypeScript, NestJS, PostgreSQL, Shadcn/UI* Jul 2025 – Sep 2025

- Contributed as Full-Stack Developer; implemented fully responsive admin and user layouts using Shadcn/UI and Tailwind CSS v4, achieving design consistency at scale.
- Built a JWT authentication system, S3 pre-signed upload pipeline, BullMQ task queuing, chat messaging, and multilingual support (next-intl) in a single production deployment.
- Structured the codebase with separated service hooks into dedicated service classes, resulting in measurably cleaner, more maintainable architecture.

Document Search Engine | *Next.js, TypeScript, Elasticsearch, MongoDB, Firebase, AWS S3* Aug 2025 – Oct 2025

- Built a full-text document search engine leveraging Elasticsearch for sub-second query performance, with AWS S3 and MinIO for secure, scalable file storage.
- Implemented Next.js SSR with dynamic SEO optimization and Tailwind CSS v4 for a modern, high-performance user experience deployed on Vercel.

HMS — Hotel Management System | *React.js, TypeScript, NestJS, PostgreSQL, Shadcn/UI* Apr 2025 – May 2025

- Implemented pixel-perfect UI from Figma designs and developed RBAC system restricting users to authorized screens, optimizing room booking, food ordering, and audit trail workflows.

DeepRAG: Intelligent Document Q&A System | *NestJS, React.js, PostgreSQL, Qdrant, LangChain* 2025

- Built an AI-powered RAG chat system enabling natural language Q&A over documents and PDFs, integrating LLM APIs (DeepInfra) with optimized vector embeddings via Qdrant for accurate, context-aware responses.

Madrasa Management System | *Next.js 13+, React.js, TypeScript, MongoDB, NextAuth* 2024

- Designed a full-stack institution management platform with student records, RBAC (user/admin roles), financial management (fee tracking, invoice generation), and multi-provider authentication (Google, GitHub, credentials).

Modern Media Website | *Astro, JavaScript, Tailwind CSS, Firestore, SendGrid* 2023

- Built a high-performance news and content platform using Astro for static site generation with SSR, dynamic Firestore-backed content, SendGrid email integration, and GitHub Actions-based continuous deployment.

EDUCATION

Karachi Institute of Economics & Technology (KIET)

Feb 2024 – Aug 2026

Bachelor of Science in Computer Science

Karachi, Pakistan

CERTIFICATIONS & COURSES

Namaste React Course – Advanced React Development (Namasty-Dev Online, 2024–2025)

Web Developer Bootcamp – Full-Stack Web Development (Udemy, 2024–2025)

Data Structures & Algorithms – DSA Course (freeCodeCamp)

ADDITIONAL INFORMATION

Languages: English (Professional), Urdu (Native), Arabic (Conversational)

Interests: AI/ML Engineering, Open Source Development, System Design, Scalable Architecture