



# ABDUL RAFE

Full Stack AI Engineer



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## Profile

Passionate CS student and aspiring Full Stack Developer with hands-on experience across the full stack — from animated, responsive frontends to relational database design and secure RESTful backends. I enjoy tackling complex UI challenges with modern tooling like Three.js, WebGL, and GSAP, while building robust backend systems with Next.js, Supabase, and Prisma. Continuously exploring AI integration into real-world web applications.

## Experience

### Full Stack AI Intern — Bayent Labs

Jun 2026 – Present

Islamabad, Pakistan — Hybrid

- Work across the company's React/Next.js and Node.js stack, with exposure to Python services and both SQL (PostgreSQL) and NoSQL (MongoDB) data layers.
- Contributed to feature development and internal tooling under the company's Build and Base Plan standards, collaborating closely with senior engineers on code quality and delivery timelines.
- Led market research and competitive analysis initiatives to inform product and design decisions, translating findings into actionable recommendations for leadership.

### Full Stack AI Engineer — Upwork, Self-employed

May 2026 – Present

Islamabad, Pakistan — Remote

- Freelance full-stack developer building fast, polished web applications for clients, spanning animation-rich frontends, secure scalable backends, and AI-powered features.
- Core stack: React, Next.js, and TypeScript on the frontend, with interfaces brought to life using Three.js, WebGL, and GSAP.
- Build APIs and data layers with Node.js, and design AI features using RAG (retrieval-augmented generation), vector databases, and LLM APIs.

## Education

### Bachelor of Computer Science

2025–2029

National University of Sciences and Technology (NUST), Islamabad, Pakistan

## Activities & Workshops

### Agentic AI Workshop — Python, AI Agents, GitHub

2025

- Participated in a hands-on team workshop exploring agentic AI systems, autonomous pipelines, and multi-step reasoning.
- Used GitHub for version control, task assignment, and collaborative development across all stages of the project.

## Projects

### AI Procurement Copilot (Full Stack AI SaaS)



Next.js, TypeScript, Tailwind CSS, NestJS, Supabase (PostgreSQL + Storage + pgvector), Groq, Vercel, Render

- Built a full-stack B2B SaaS platform that automates supplier quotation comparison for procurement teams, replacing hours of manual review with minutes of automated analysis.
- Engineered a document pipeline that extracts data from uploaded supplier PDFs, compares suppliers side-by-side, and detects pricing, compliance, and delivery risks using the Groq LLM API.
- Implemented a RAG-based document Q&A layer with Supabase pgvector, enabling natural-language queries over uploaded supplier quotations and contracts.
- Architected a split deployment with a Next.js frontend on Vercel and a NestJS backend on Render, backed by Supabase for relational data and file storage.

### Quran & Hadith Assistant (Full Stack AI / RAG Web App)



Next.js, React.js, TypeScript, Tailwind CSS, Node.js, Express, Supabase (PostgreSQL + pgvector), all-MiniLM-L6-v2 (Transformers.js), Anthropic Claude, Vercel, Render

- Built a Retrieval-Augmented Generation (RAG) system over the full Quran (6,236 verses, Arabic + English) and the Sahih Bukhari Hadith collection; generated embeddings locally with all-MiniLM-L6-v2 via Transformers.js, stored and searched using pgvector on Supabase.
- Designed a constrained LLM pipeline with Anthropic Claude so answers draw only from retrieved sources; engineered prompts to identify a query's true subject and discard superficial keyword matches, with strict citation to the exact Surah, Ayah, or Hadith number.

## Personal Portfolio (Frontend Web Application)



*HTML5, CSS3, Vanilla JS (ES6+), CSS Custom Properties, CSS Grid & Flexbox, CSS Keyframe Animations, Three.js, WebGL, Cobe, IntersectionObserver API, requestAnimationFrame, Touch Events API, localStorage, Vercel*

- Built entirely without frameworks; engineered a design token system via CSS Custom Properties with scroll-triggered animations using the IntersectionObserver API and smooth render loops via `requestAnimationFrame`.
- Integrated Three.js and raw WebGL for a real-time rotating 3D flower in the Skills section, and Cobe for a WebGL globe with dot-rendered landmasses; added mobile gesture support via the Touch Events API.

## Build Link (Full Stack Web App)



*Next.js 14 (App Router), React.js, Tailwind CSS, Node.js, MongoDB, NextAuth.js, Cloudinary, Render*

- Construction marketplace connecting Pakistani homeowners with contractors; designed a MongoDB schema covering users, contractors, listings, bookings, and reviews.
- Implemented NextAuth.js authentication with protected routes, Cloudinary for CDN image upload and transformation, and server-side rendering via Next.js App Router.

## Rate NUST Cafes (Full Stack Web Platform)



*HTML5, CSS3, Vanilla JS (ES6+), GSAP + ScrollTrigger, WebGL (raw GLSL shaders), Canvas 2D API, Supabase (PostgreSQL + Auth + RLS), Vercel*

- Full stack NUST cafe rating platform with real-time crowd tracking, cross-cafe price comparison, restaurant-style live-search menu, and a student ratings leaderboard.
- Built a custom WebGL grid with mouse-tracked GLSL scan beam shader (no Three.js), 3D CSS food marquee, glitch-text hero, and interactive SVG campus map overlaid on a real NUST satellite image.
- Implemented `@nust.edu.pk` email-restricted Supabase Auth with Row Level Security for per-student data privacy.

## AI News Summariser (GUI and Console Based)



*Java 17, JavaFX 21 (FXML + CSS), Apache Maven, NewsAPI, Google Gemini API, java.net.http, org.json, MVC architecture*

- Cross-platform desktop app that fetches live news via NewsAPI and generates multi-paragraph AI summaries using Google Gemini; REST calls handled with Java's built-in `java.net.http`, JSON parsed with `org.json`.
- Structured with MVC-like architecture (FXML views + controllers), centralized `NewsApiService` & `GeminiService`, custom `.env` loader at runtime, packaged as a JAR via the JavaFX Maven plugin.

## Plotify (C++ Console App)



*C++ (ISO C++), STL (iostream, fstream, string, iomanip), struct-based in-memory data model, fstream file persistence, g++/clang++ toolchain*

- Menu-driven CLI real estate app where hosts list plots for sale and guests search, filter, and book properties based on requirements.
- Implements a booking-to-listing matching algorithm that confirms bookings and advances to the next iteration; data persisted across sessions via fstream read/write to `plots.db.txt`.