

# ABDUL MOEIZ

Full-Stack Engineer · AI & Automation Systems

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## PROFESSIONAL SUMMARY

Full-Stack Engineer with 1.5+ years shipping production web applications in Next.js, NestJS, and PostgreSQL, specialized in integrating LLMs, ML pipelines, RAG systems, and multi-API automation workflows into user-facing products. Built a production-grade AI crypto trading platform with a custom RAG-powered reasoning agent and ML ensembles achieving 80–90% directional accuracy on live crypto markets, plus a Python-orchestrated pre-call intelligence pipeline combining 7+ data sources and LLM synthesis. Hands-on with LangChain-pattern agent orchestration (built from primitives — FAISS retrievers, structured-output parsers, tool-use dispatch, conversation memory) and comfortable from PostgreSQL schema design through vector retrieval to containerized Vercel and Docker deployments.

## TECHNICAL SKILLS

<b>Languages</b>	TypeScript, JavaScript (ES6+), Python, C++, C#, SQL, HTML5, CSS3
<b>Frontend</b>	Next.js (App Router, Server Components, Server Actions), React.js, Tailwind CSS, Framer Motion, ReactFlow, Lightweight-Charts, Recharts, Figma
<b>Backend</b>	Node.js, NestJS, Express.js, FastAPI, REST APIs, WebSockets, Socket.IO, JWT, OAuth 2.0, RBAC
<b>Databases</b>	PostgreSQL, Supabase, MongoDB, Redis, Row-Level Security (RLS), Schema Design, Query Optimization, Indexing
<b>AI / ML / GenAI</b>	LLM Integration (Claude, Gemini, Groq), Prompt Engineering, Chain-of-Thought, RAG, FAISS Vector Stores, LangChain-Pattern Agentic Workflows (built from primitives), Structured JSON Output, TensorFlow, Scikit-learn, XGBoost, LightGBM, CatBoost, Feature Engineering, Backtesting
<b>Automation</b>	Multi-API Orchestration, Web Scraping (Playwright, trafilatura), Algorithmic Trading Bots, Marketing Automation, Workflow Automation, Webhooks, Cron Jobs, Real-Time Data Pipelines, Celery
<b>DevOps / Cloud</b>	Docker, Kubernetes, Jenkins, CI/CD Pipelines, GitHub Actions, Astronomer (Airflow), Git, Vercel, Railway, Supabase Storage
<b>Domain</b>	FinTech, Algorithmic Trading, Risk Management, Subscription Billing, SaaS Architecture, GenAI Reasoning Agents

## PROFESSIONAL EXPERIENCE

### Full-Stack Web Developer · AR&CO Law Firm · Remote

Dec 2025 – Present

arandcolaw.com

**Tech:** Next.js 15 (App Router, Server Components), React 19, NestJS, TypeScript, Tailwind CSS, Framer Motion, Supabase (Postgres, Auth, Storage, RLS), Zod, Cal.com Embed, Lemon Squeezy, Google Docs API, SendGrid, Vercel

- Designed and shipped arandcolaw.com end-to-end (architecture, schema, backend, frontend, deployment) — a production legal SaaS for AR&CO Law Firm covering authentication, consultation booking, civic-retainer subscriptions, multi-service registrations, case tracking, complaint workflows, and a Google-Docs-powered content system, serving 500+ MAU.
- Owned a quality-driven, brand-led frontend: cohesive AR&CO visual identity with custom typography and color system, Framer Motion page transitions and scroll/step animations, multi-step animated forms, polished loading and empty states, and full responsive UX delivering a Lighthouse Performance score of 94 (up from 62) and ~60% LCP reduction.
- Built a 4-role RBAC system (admin, attorney, staff, client) on Supabase Auth with Row-Level Security across 20+ tables and 130+ policies, optimized via (select auth.uid()) consolidation — zero unauthorized-access incidents in 5+ months of production and a clean Supabase security-advisor pass.
- Integrated recurring subscription billing and one-time payment flows on Lemon Squeezy (replacing Safepay) — civic retainer (PKR 700/month), legal consultations (PKR 50,000), and variable-fee facilitation services — with HMAC-SHA256 webhook verification, idempotent event routing, auto-account creation on payment confirmation, and 200+ monthly transactions reconciling at 99.9%.
- Built a multi-service registration system: guest-friendly multi-step forms (country selector, phone validation, animated steps) per service category, document upload to Supabase Storage, auto-generated reference numbers

(SRV-YYYY-NNNN), and webhook-triggered Supabase Auth user provisioning + credential email on successful payment.

- Built a Google-Docs-powered CMS with AI-generated SEO: admins paste a Google Doc URL, the backend fetches via service account, converts Docs JSON to HTML, and auto-generates slug, meta title, meta description, read time, and Open Graph + JSON-LD Article schema — with SSG and 60s revalidation for blog posts and case studies.
- Implemented end-to-end consultation scheduling with embedded Cal.com (post-payment gating, BOOKING\_CREATED webhook ingestion, idempotent reference matching) and a full case-tracking module: auto-generated case numbers (CASE-YYYY-NNNN), activity timelines, attorney assignment, and client/attorney/staff scoped views.
- Cut p95 API latency from 720ms to 210ms via composite indexing, RLS optimization (62 auth\_rls\_initplan warnings → 0, 88 permissive policies consolidated), and query tuning; added a global audit-log interceptor with sensitive-field redaction across ~25 admin routes.

## MERN Stack Developer Intern · Calcite · Remote

Jun 2025 – Jul 2025

**Tech:** React, Node.js, Express, MongoDB, OAuth 2.0, Meta Graph API (Facebook + Instagram), LinkedIn Marketing API, Twitter API

- Shipped a full-stack social media marketing app centralizing 5+ social accounts per user, with content scheduling, automated posting, and unified analytics.
- Built Node.js/Express services with OAuth integrations across Meta Graph API (Facebook + Instagram), LinkedIn Marketing API, and Twitter — including token refresh and account linking — and MongoDB models supporting ~10k scheduled posts in test.
- Designed reusable React dashboard components, cutting duplicate UI code by ~40% and reducing new-feature rollout from 3 days to 1.

## KEY PROJECTS

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### AI Crypto Trading Platform · Live demo · Microservices pending deployment

**Tech:** Next.js 15, React 19, Express.js, TypeScript, Python 3.11, PostgreSQL, Redis, Socket.IO, ReactFlow, XGBoost, LightGBM, CatBoost, FAISS, Claude / Groq APIs, Binance API, Docker, CI/CD

Production full-stack SaaS combining a no-code visual strategy builder, a GenAI reasoning agent, and a 4-stage ML pipeline. ML ensembles achieve 80–90% directional accuracy on live crypto markets across 10+ trading pairs. Layered Express backend (Controller → Service → Repository → DB) with 20+ domain services, 18 route groups, and Python ML spawned via child process or Celery.

#### ► CryptoMind AI — GenAI Reasoning Agent (RAG-powered) · Recently shipped

Conversational BTC market analyst at /market/[id]/chat. Implements 5 GenAI techniques: prompt engineering, 5-step chain-of-thought protocol, agentic tool use, retrieval-augmented generation, and structured JSON output. Slow path fetches 200 live Binance candles → Python orchestrator runs indicator engine + 10 parallel ML inferences + FAISS top-3 RAG retrieval over a curated historical-setup vector store → LLM produces a structured analysis card; all outputs cached in Redis (2-hr TTL). Fast path serves follow-up turns from cache via direct TypeScript Anthropic SDK calls in ~1–3s, skipping Python spawn entirely. Cuts follow-up latency by 15× versus naive re-run on every turn.

**Tech:** Claude Sonnet / Groq llama-3.3-70b · sentence-transformers (all-MiniLM-L6-v2) · FAISS · Redis · Python · TypeScript · Anthropic SDK

#### ► Visual Strategy Builder — No-Code Algo Designer

Drag-and-drop ReactFlow canvas where non-technical users compose trading strategies as node graphs across 20+ technical indicators, conditions, and risk rules. Custom graph-delta system lets the LLM edit strategy graphs through structured JSON patch operations rather than full-state rewrites. Client-side backtest preview runs in-canvas before deployment; live automation panel runs deployed strategies against real-time WebSocket price feeds.

**Tech:** Next.js · ReactFlow · TypeScript · Express.js · DEAP · Redis · WebSocket

#### ► ML Trading Pipeline — 4-Stage Supervised Learning

Feature pipeline computes 132 TypeScript indicators across 10 categories (Order Blocks, FVG, Liquidity, Footprint, Patterns, etc.) into ML-ready feature vectors. Stage 2 selects 25 features per event via 5-fold CV F-stat → MI → importance. Stage 3 trains 8 binary event classifiers (breakout, liquidity sweep, reversal, trend continuation, volume spike, false breakout, etc.) with sigmoid calibration. Stage 4 builds an XGBoost + LightGBM + CatBoost AUC-weighted soft-vote ensemble for entry/exit probabilities, with t-1/t-2/t-3 lag features on RSI, MACD, volume ratio, and ATR.

**Tech:** Python · XGBoost · LightGBM · CatBoost · scikit-learn · pandas · Celery · Redis

#### ► Backtesting & Validation Engine

Server-side walk-forward backtester with Combinatorially Purged Cross-Validation (CPCV) to prevent look-ahead leakage. Computes Sharpe, Sortino, max drawdown, win rate, profit factor, and average trade duration. Pairs with a lightweight

client-side preview engine for instant in-canvas feedback. Genetic algorithm optimizer (DEAP) runs walk-forward fitness evaluation with built-in risk-constraint penalties to avoid in-sample overfitting on hyper-parameter search.

**Tech:** TypeScript · Python · DEAP · Express.js · PostgreSQL · Celery

### ► Community Hub — Real-Time Social Layer

Socket.IO-powered chat namespace (rooms, threads, JSONB emoji reactions, soft-delete moderation) plus a strategy marketplace with 5-star ratings synced via service transaction and Postgres trigger. Copy-trading subsystem mirrors leader trades through a Node EventEmitter bus with allocation caps enforced at both service and DB-trigger layers as a safety net.

**Tech:** Socket.IO · PostgreSQL · Express.js · Next.js

### Pre-Call Brief Generator — Multi-API Python Automation Pipeline · *Personal project*

**Tech:** Python 3.11, FastAPI, Celery, Redis, PostgreSQL (Supabase), SQLAlchemy 2.0, Pydantic v2, Playwright, trafilaturo, Jinja2, WeasyPrint, Google Gemini API (2.5 Flash + Pro), Meta Ad Library API, Google PageSpeed API, Resend, Sentry, Docker, Railway

- Architected an end-to-end Python automation pipeline that turns a prospect URL into a 1-2 page pre-call intelligence brief, replacing 20-40 minutes of manual research per lead with an automated Markdown + PDF deliverable emailed to the salesperson.
- Built a multi-API orchestration layer combining 7+ free-tier data sources — self-hosted Playwright site & LinkedIn scrapers, Meta Ad Library, Google PageSpeed, regex-based tech-stack detection (CMS, analytics, ad pixels, marketing-automation tools), DIY SEO signals (sitemap parsing + structured data + indexed-page counts), and optional Hunter.io enrichment.
- Designed a 6-stage LLM workflow on Google Gemini 2.5 Flash / Pro with Pydantic-typed structured output: parallel asyncio.gather collection (return\_exceptions for graceful degradation) → sequential extraction → marketing posture analysis → final brief synthesis, with automatic data\_gaps flagging when sources fail.
- Implemented Celery + Redis async job processing, FastAPI ingestion endpoint with API-key auth and webhook callbacks, SQLAlchemy + Alembic schema (clients, briefs, pipeline\_events) for full step-by-step observability, and WeasyPrint Markdown→HTML→PDF rendering with Resend delivery.
- Production-shaped architecture under \$25 total cost — every free-tier component (Gemini, scraper, enrichment) is a single-file swap to a paid alternative (Claude Sonnet, Apollo, DataForSEO) without touching pipeline logic.

### Automated DEX Trading Bot · [github.com/moeiz2701/DexTradingBot](https://github.com/moeiz2701/DexTradingBot)

**Tech:** TypeScript, Node.js, ethers.js, axios, DexScreener API, Danfo.js (DataFrames), ExcelJS, Real-Time On-Chain Data Pipelines

- Engineered an automated TypeScript trading bot for decentralized exchanges executing momentum and volatility-based strategies, with dynamic take-profit, trailing stop-loss, and adaptive risk management.
- Built a real-time DexScreener ingestion pipeline (axios + ethers.js) consuming on-chain price, volume, and liquidity across 100+ token pairs, with automatic filtering for volume spikes, liquidity changes, and new-pair listings.
- Implemented comprehensive trade logging with automated Excel export — every entry, exit, indicator value, decision, and PnL outcome is persisted row-by-row into structured .xlsx workbooks via Danfo.js DataFrames and ExcelJS for post-run analysis and strategy tuning.
- Developed pullback and breakout confirmation logic (anti-FOMO) that reduced false entries by ~35% versus naive momentum triggers, with on-chain monitoring reacting to price spikes in <500ms.
- Optimized execution timing and slippage control, improving trade efficiency by ~20% in high-volatility conditions across 200+ simulated runs.

### SMM Marketing Automation Platform · [github.com/moeiz2701/SMM\\_platform](https://github.com/moeiz2701/SMM_platform)

**Tech:** React, Node.js, Express, MongoDB, OAuth 2.0, Meta Graph API, LinkedIn Marketing API, Twitter API

- Built a centralized SMM platform managing multiple social accounts from a single dashboard, with OAuth-based account linking, content scheduling, and campaign analytics.
- Developed backend APIs for account data, post queuing, and scheduled-publishing workers, with clean separation between frontend and backend services for maintainability.

## EDUCATION

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BS in Software Engineering · FAST NUCES, Islamabad

Aug 2022 – Present

## LANGUAGES

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English (Professional, Fluent) · Urdu (Native)