Mustapha Muhsin

FULL-STACK & AI ENGINEER

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Full-stack and AI engineer building commercial web products, backend systems, and independent AI applications. My work spans React and Next.js interfaces, TypeScript and Python services, PostgreSQL, subscription billing, AWS architecture, and automated testing. I turn operational problems into usable software and take systems from design through delivery.

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, C++

Frontend: React, Next.js, Tailwind CSS, responsive interfaces

Backend & Databases: FastAPI, Node.js, Express, PostgreSQL, MySQL, DynamoDB, Redis, Drizzle ORM, Prisma, Auth.js, RESTful APIs, Server-Sent Events (SSE)

AWS & Cloud Infrastructure: AWS (Lambda, ECS, Fargate, Step Functions, DynamoDB, S3, IAM, API Gateway, Cognito, Bedrock), Railway, Docker, Vercel

AI Engineering: RAG Pipelines, LLM Integrations, Tool Calling, LangChain, LangGraph

Developer Tools: Git, Docker, Playwright, Vitest, Cursor, Claude Code, GitHub Actions, AWS CLI

EXPERIENCE

White Label Resell Remote - Los Angeles, CA

AI Backend Engineer *January 2025 - Present*

AI content generation and billing

- Redesigned batch content generation as concurrent jobs with modular processing and streamed progress, improving throughput and making long-running work easier to follow.
- Built subscription and credit billing flows, feature access checks, and a user-facing billing interface.
- Added browser and database checkpoints so users could return to interrupted generation work without starting over.

Confidential enterprise engagement

- Built a client request portal and internal delivery workspace with React, Next.js, TypeScript, and PostgreSQL, covering intake, progress tracking, collaboration, role-aware access, and automated checks.
- Designed an AWS operations-platform proof of concept for a confidential engagement, mapping services, APIs, access, and data flows and preparing cost analysis for client review.

Agent architecture and automation

- Designed a governed agent workflow separating codebase investigation, isolated implementation, and Playwright browser verification before pull request review.
- Built lead intake, attribution, data-sync, and scheduled reporting automation that reduced dependence on a paid tool.

National Centre for AI & Robotics (NCAIR) — NITDA Abuja, Nigeria

AI & Embedded Systems Intern *February 2022 - July 2022*

- Built the hardware prototype for Elonosia AI (an NCAIR-incubated startup for ML-based malaria detection) — designing the automated microscopy capture device with ESP32/ESP8266, Altium PCBs, and 3D-printed enclosures to bridge the model to clinical use.
- Contributed to training and validation of TensorFlow CNN models for blood smear malaria detection.
- Delivered hands-on STEM workshops for children through NITDA's SB4Kids program — using 3D-printed Otto robots and microcontrollers to introduce IoT, robotics, and programming.

INDEPENDENT PROJECTS & OPEN SOURCE

Cleared | Live Demo

- Built an AI-assisted PayPal sandbox dispute workflow with read-only investigation, evidence-backed claim checking, and human approval before submission.
- Created a 13-scenario model evaluation suite covering weak evidence, prompt injection, and tool failures; added unit, integration, and browser tests.

Lifeline | Live Demo

- Built a sandbox donation-recovery workflow with verified webhooks, read-only agent diagnosis, and human-approved actions.
- Used idempotent writes and re-read uncertain payment outcomes; added failure-path tests for refusals, timeouts, and repeated actions.

Spoilclock | Live Demo

- Built a responsive full-stack hackathon prototype for redirecting rejected produce, with AI buyer-agent negotiation and a database-backed listing flow.
- Integrated PayPal Sandbox payments and webhook-backed status updates; the demo uses fictional participants and no real payments.

Open Design | Merged PR #3821

- Fixed obsolete Gemini model defaults across web and daemon paths and added regression tests for model selection and connection behavior.

RAG Chatbot API | GitHub

- Built a document question-answering API with FastAPI, PostgreSQL, Pinecone, and AWS S3. Celery and Redis process document ingestion in the background; answers cite retrieved source material.
- Added Docker setup, database migrations, and automated checks to make the service easier to run and maintain.

Facial Recognition Attendance API | GitHub

- Developed employee registration, face-based check-in, and attendance history endpoints using FastAPI, OpenCV, dlib, PostgreSQL, and JWT authentication.
- Protected registration with admin access and stored attendance events for later lookup and filtering.

IoT Solar Tracking System | Final-Year Project

- Designed and built an ESP8266-based solar tracker with ThingSpeak remote monitoring and control.
- Integrated the controller, sensors, and mechanical movement into a working final-year prototype.

EDUCATION

Federal University of Technology Minna
B.Eng., Electrical and Electronics Engineering