

NGANA NOA JUNIOR FREDERIC

Full-Stack Engineer · Backend & Mobile · Applied AI / NLP Research

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PROFILE

Full-stack engineer with 2+ years building backend systems, mobile apps, and AI-powered products across healthcare, fintech, and real-time platforms. I have shipped across the full stack, from REST APIs to Expo mobile builds to cloud deployment on AWS EC2 and DigitalOcean. I have cut API latency by 42%, shipped a medical query system that hits 93% answer accuracy, and published NLP research on low-resource African languages out of a joint university collaboration. Comfortable taking full ownership of a product end to end, backend, frontend, mobile, and infrastructure, from design through deployment.

WORK EXPERIENCE

Backend Engineer (Lead Contributor) | AFreeServ

Sep 2025 – Nov 2025, Remote

- Built a real-time messaging system for a service-booking platform serving thousands of concurrent users.
- Cut API latency by 42% by rewriting slow queries, adding TypeORM indexes, and introducing a caching layer.
- Brought test coverage to ~85% using Jest and Supertest in the lead-up to a major production release.
- Refactored core backend modules and increased overall throughput by 3x; ran code reviews to keep the codebase consistent.

Backend Engineer | Ukuqala Platform, Clinical Triage System

Oct 2024 – Present, Remote

- Designed and built the backend for a clinical triage platform that analyses patient symptoms and surfaces structured guidance to clinicians, with the physician making all final calls.
- Wrote the REST API layer in Python handling real-time intake of symptom data and returning structured clinical suggestions.
- Trained and integrated NLP models to parse free-text symptom descriptions and map them to candidate diagnoses.
- Built the full data pipeline from raw input through preprocessing, normalisation, and semantic similarity scoring.
- Built the mobile app frontend in Expo (React Native), covering the patient symptom intake flow and the clinician dashboard views.
- Set up authentication and data-handling controls in line with healthcare privacy requirements.
- Loaded 583+ medical reference documents into Pinecone and tuned the retrieval pipeline to keep response times under 2 seconds under load.

Python Backend Engineer | Primus Cloud Solutions Ltd

Aug 2024 – May 2025, Remote

- Worked on Sendi, an international money-transfer platform. Built the core transaction backend and cross-border compliance logic.
- Wrote the Stripe payment microservice from scratch, adding fraud-detection rules that brought failed transactions down by 28%.
- Built the notifications service (email, SMS, push) with delivery latency consistently under 1 second.
- Set up a horizontally scalable microservice stack using FastAPI, Redis, and PostgreSQL.
- Deployed and maintained services on AWS EC2 and DigitalOcean, handling networking, environment configuration, and uptime.

Research Assistant, NLP & Data Science | University of Hagen & ICT University

Jul 2024 – Feb 2025, Remote

- Built LinguoMT, a neural machine translation pipeline fine-tuned on MarianMT Transformer architectures across 9 African language pairs, including Igbo, Hausa, Swahili, and several severely under-resourced Central African languages such as Ghomala, Bulu, and Fulfulde Adamawa.

- Designed an automated data curation and alignment pipeline tailored to low-resource languages; training sets were capped at 10,000 sentence pairs per language for controlled, comparable experiments.
- Achieved a BLEU score of 40.67 on English-to-Igbo translation, outperforming both the NLLB-200 and OPUS-MT baselines, and 22.43 on English-to-Bulu.
- Established the first publicly available BLEU benchmarks for several Central African languages, filling a gap in the NLP evaluation landscape.
- Released all curated datasets, tokenizers, and fine-tuned models on Hugging Face Hub, and shipped a web-based real-time translation app alongside the research.
- Co-authored the paper documenting this work, published in Informatics (MDPI).

PROJECTS

AlgoViz | Personal Project, Full-Stack (Next.js)

2026

- Built a FAANG interview-prep platform covering 25 DSA problems, with step-through algorithm animations and multi-language code examples.
- Designed and implemented the full frontend in Next.js end to end, including the animation engine for the algorithm visualizations, alongside the backend logic.

EDUCATION

Bachelor of Computer Science | ICT University, Yaounde

Oct 2022 – Jul 2025

PUBLICATION

Ngana Noa Junior et al. Informatics, MDPI, 2024.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, Node.js, SQL

Frontend & Mobile: React, Next.js, Expo (React Native)

Backend Frameworks: NestJS, FastAPI, Express.js, Flask

AI & NLP: Hugging Face Transformers, TensorFlow, NLP model training, vector search (Pinecone)

Databases: PostgreSQL, Supabase, Redis, Pinecone

Cloud & DevOps: AWS EC2, DigitalOcean, Docker, Docker Compose, Git

Architecture: Microservices, REST APIs, Distributed Systems, System Design, API Optimization, Model Deployment

CERTIFICATIONS

- Stanford Online, Algorithms (2024)
- Google / Coursera, Python for Everybody & Machine Learning
- TOEFL iBT, English Proficiency (2024)

LANGUAGES

English, Fluent (TOEFL certified) French, Native