PAUL MADU

Full-Stack Software Engineer | Petroleum Engineering Graduate | Web3 | React Native | E-commerce

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PROFESSIONAL SUMMARY

Results-driven Full-Stack Software Engineer with 5+ years of hands-on experience building and shipping production-grade web, mobile, and decentralised applications. Specialises in Next.js, React, React Native, Node.js, Web3, and e-commerce platform engineering. Also holds a Bachelor of Engineering in Petroleum Engineering (Second Class Upper, CGPA 3.74, FUTO 2024) with direct regulatory experience at the Nigerian Upstream Petroleum Regulatory Commission (NUPRC) — spanning exploration geophysics, drilling operations, reservoir engineering, production monitoring, licensing, and HSE regulation. This dual background in petroleum engineering and software development is rare and directly valuable for energy-tech, geoscience software, and digital oilfield roles. Actively pursuing relocation to Sydney, Australia, with close family already resident. Open to Subclass 482 visa sponsorship.

CORE TECHNICAL SKILLS

Next.js	**React.js**	**React Native**
Node.js / Express	**TypeScript**	**Python**
Web3 / Solana.js / Blockchain	**PostgreSQL**	**REST & GraphQL APIs**
E-commerce Platforms	**AWS / Cloud Deploy**	**Git & CI/CD**
Stripe Payment Integration	**Firebase / Expo**	**Data Analysis & ML**
Seismic Data Interpretation	**Reservoir Engineering**	**Production Data Analysis**

WORK EXPERIENCE

Senior Full-Stack Web Developer

SempaiHQ (sempaihq.com) | 2022 – Present | *Remote*

- Architected and built a live production Web3 platform on Solana mainnet using Next.js, PostgreSQL, and Solana.js — serving real daily active users with on-chain reward logic, token-gated content access, and Solana blockchain transaction verification
- Designed non-custodial wallet integrations (Phantom, Solflare) enabling users to earn, transfer, and manage digital assets; implemented real-time leaderboards, user reputation systems, and gamified daily reward cycles driving sustained active user retention
- Optimised database queries and backend architecture, reducing API response time by ~40% through query indexing and connection pooling; maintained 99%+ production uptime across all feature releases
- Led front-end component architecture using React and TypeScript, establishing a reusable design system; implemented CI/CD pipelines with GitHub Actions enforcing code quality across all production deployments
- Built RESTful and GraphQL APIs supporting data-intensive features including authentication, reward distribution, and user analytics; collaborated with stakeholders to translate business requirements into technical specifications

Full-Stack Developer

DigiTech Infotech | 2021 – 2022 | *Bayelsa, Nigeria*

- Delivered full-stack web and mobile application projects as lead developer at the foremost private technology centre in Bayelsa State, working across multiple client industries
- Built responsive e-commerce platforms with product catalogues, Stripe payment integration, admin dashboards, inventory management, and order tracking modules; developed cross-platform mobile apps in React Native shipped to App Store and Google Play
- Designed RESTful API backends using Node.js and Express with PostgreSQL; managed client relationships, scoped projects, and delivered on schedule across all engagements

Engineering Intern — Upstream Regulatory Operations

Nigerian Upstream Petroleum Regulatory Commission (NUPRC) | 2023 | *Abuja, Nigeria*

- Completed a structured rotation across all major upstream regulatory divisions of Nigeria's apex petroleum regulator, gaining direct exposure to the full upstream oil and gas value chain
- Exploration: reviewed geophysical data including seismic survey assessments, geophone-based acquisition data, and subsurface well log submissions stored in the National Data Repository (NDR) — Nigeria's central repository for all upstream seismic, well, and production data
- Drilling: monitored drilling site operations for compliance with the Petroleum Industry Act (PIA) 2021; reviewed well permit documentation, drilling programme submissions, mud logging data, and directional drilling reports from IOCs and indigenous operators
- Production & Reservoir: supported monitoring of producing wells, flowstations, and offshore platforms; assisted in review of daily production data, reservoir performance reports, and decline curve analysis from live Niger-Delta fields
- Licensing, HSE & Revenue: processed PPL/PML applications, reviewed environmental impact assessments and gas flaring compliance reports, and assisted in royalty computation and production revenue reconciliation between operator reports and NUPRC measurement records
- Applied Python scripting to automate production data processing and cross-referencing tasks, reducing manual reconciliation time on assigned analytical assignments

UNDERGRADUATE RESEARCH

Enhancing Heavy Oil Recovery in the Niger Delta through Thermal-Chemical Methods: An Experimental Approach

Federal University of Technology Owerri / University of Port Harcourt | 2024

- Designed and conducted core flooding laboratory experiments using real Niger-Delta crude oil samples (API gravity 17–19, 20% porosity) combining steam injection with a novel self-developed surfactant-polymer chemical mixture
- Key finding: hot chemical flooding outperformed steam flooding alone, achieving high recovery rates at lower operating temperatures of 80°C — demonstrating a more energy-efficient and cost-effective approach for heavy oil fields in the Niger-Delta
- Used thermal simulation software for history matching and calibration of experimental data; built predictive models for recovery performance and economic feasibility across multiple thermal-chemical injection scenarios
- Explicitly recommended machine learning proxy models for predicting oil flow rates from reservoir parameters, reducing dependence on extensive experimental analysis — a direction now being pursued at postgraduate level through ongoing outreach to leading petroleum engineering research groups in Australia and the USA

SELECTED PROJECTS

SempaiHQ — Web3 Content & Rewards Platform — sempaihq.com

Tech: *Next.js, PostgreSQL, Solana.js, Node.js, TypeScript, Phantom/Solflare wallet SDKs*

- Live production Web3 platform on Solana mainnet enabling creators to earn on-chain rewards; wallet-gated access, on-chain transaction verification, real-time reward distribution, and gamified token economy serving real daily active users

E-commerce Platform — Full Stack — github.com/paulphysio

Tech: *Next.js, Node.js, Stripe API, PostgreSQL, Tailwind CSS, Redis*

- Production storefront with multi-step checkout, Stripe webhook order fulfilment, admin dashboard with inventory management, revenue analytics, and role-based access control handling real transactions end to end

Cross-Platform Mobile Application — github.com/paulphysio

Tech: *React Native, Expo, Firebase Realtime DB, REST APIs, Push Notifications*

- iOS and Android app with user authentication, real-time data sync, push notifications, and offline caching; published to both App Store and Google Play with sub-2-second cold-start load times

Petroleum Data Analytics Pipeline — github.com/paulphysio

Tech: *Python, Pandas, NumPy, Matplotlib, Scikit-learn, Jupyter Notebook*

- Automated decline curve fitting, reservoir performance visualisation, and statistical analysis of upstream production data — built to bridge petroleum engineering domain knowledge and software engineering; demonstrates the ML proxy model approach recommended in undergraduate research

EDUCATION

Bachelor of Engineering — Petroleum Engineering

Federal University of Technology, Owerri (FUTO) | Graduated 2024 | CGPA: 3.74 (Second Class Upper)

- Core subjects: Thermodynamics, Reservoir Engineering, Drilling Engineering, Well Logging & Formation Evaluation, Production Engineering, Fluid Mechanics, Numerical Methods, and Technical Writing
- Applied Data Analysis, Systems Engineering, and Geophysics — rigorous quantitative foundation directly applicable to data-driven software and geoscience research
- Final year project: original experimental EOR research with real Niger-Delta crude oil — see Undergraduate Research section above
- Society of Petroleum Engineers (SPE) student chapter member, FUTO

CERTIFICATIONS & CONTINUOUS LEARNING

- IELTS Academic — Target: Band 8.0 (in preparation; CLB 10 = Superior English = 20 Australian immigration points)
- ACS Skills Assessment — In progress (required for Australian ICT skilled migration pathway, Subclass 189/190)
- AWS Cloud Practitioner — Actively studying; planned certification for Australian tech market readiness
- Solana Blockchain Development — Self-directed; demonstrated through SempaiHQ live deployment on Solana mainnet

ADDITIONAL SKILLS & PROFESSIONAL ATTRIBUTES

- Fluent English — strong written and verbal communication across technical, academic, and client-facing contexts
- 5+ years experience in remote-first, asynchronous distributed teams across multiple time zones
- Rare dual domain expertise: petroleum engineering + full-stack software development — directly valuable for energy-tech, geoscience software, digital oilfield, and ML-for-energy research roles
- Deep commitment to code quality: code reviews, documentation, unit testing, and CI/CD are standard practice across all projects
- Active GitHub profile (github.com/paulphysio) with public repositories demonstrating production-grade, real-world software development

RELOCATION & VISA

Actively pursuing relocation to Sydney, Australia. A close family member has been a long-term Sydney resident for many years, providing an established support network and making relocation a concrete, near-term commitment. Currently on the Australian skilled migration pathway — IELTS preparation underway (target Band 8.0), ACS skills assessment in progress. Open to Subclass 482 Temporary Skill Shortage visa sponsorship with pathway to Subclass 186 or 189 permanent residency. Available to begin remote work immediately, with full relocation to Sydney as soon as visa is in process.