

Pascal Ally Ahmadu

Senior Backend Engineer | Node.js, TypeScript, NestJS, PostgreSQL, MongoDB, Redis, Cloud Deployment, Platform Operations

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PROFESSIONAL SUMMARY

Senior backend engineer with 5+ years designing, building and operating Node.js and TypeScript services in production for enterprise, public-sector and SaaS clients across insurance, logistics, HR and ERP domains in Nigeria and internationally. Owns the full service lifecycle: REST API and microservice design, event-driven real-time systems (WebSockets, Redis pub/sub, BullMQ), LLM and speech-to-text integrations delivered through secured server-side services, privacy-by-design data architectures, PostgreSQL and MongoDB data modelling, Redis caching, authentication, RBAC and audit trails, Docker-based deployment on AWS, VPS and Linux environments, GitHub Actions CI/CD, and the monitoring, backup and rollback discipline that keeps systems available and recoverable. IBM-certified in containers, Kubernetes and OpenShift. Leads architecture decisions and code review across client engagements and works daily with AI-assisted development tools while retaining full accountability for everything that ships to production.

CORE TECHNICAL SKILLS

- **Backend Engineering:** Node.js, TypeScript, NestJS, Express.js, Prisma, RESTful API design, code-generated OpenAPI/Swagger documentation, microservices, event-driven and real-time architecture (WebSockets, Redis pub/sub, BullMQ job queues), third-party integrations and HMAC-verified webhooks, JWT authentication, RBAC, audit trails, API security best practices
- **Databases, Caching & Data Privacy:** PostgreSQL, MongoDB (atomic conditional updates, multi-document transactions, Mongoose schema validation), Redis (caching, pub/sub, session store, token blacklisting, live counters), schema and data model design, PII isolation and pseudonymisation, query optimisation, migrations, backups and restoration
- **Cloud, Containers & Infrastructure:** AWS-based deployments, DigitalOcean App Platform and Spaces (S3-compatible, AWS SDK v3), Docker and Docker Compose, Kubernetes and OpenShift (IBM certified), Linux server administration, Nginx reverse proxy, SSL/TLS, DNS and domain routing, firewalls, environment variables and secrets management
- **CI/CD & Release Engineering:** GitHub Actions build, test and deploy pipelines, rollback procedures, release tagging, dev / staging / UAT / production separation, Git workflows and code review
- **Monitoring & Reliability:** Sentry error monitoring and tracing, logging, alerting, uptime and health checks, smoke tests, performance and cost optimisation, production troubleshooting
- **Automated Testing:** Jest, Vitest, Supertest, Cypress and Playwright for unit, integration, API and end-to-end coverage; clean, maintainable, production-ready code
- **AI Integration & AI-Assisted Engineering:** Integration of LLM APIs (Anthropic Claude) and streaming speech-to-text (Deepgram) into products through rate-limited server-side services that keep model keys off clients; AI-assisted scaffolding, refactoring, test generation and documentation under disciplined human review; protection of secrets, credentials and client data in AI workflows
- **Frontend (supporting):** React, Next.js, React Native, TypeScript, component-driven UI, state management, responsive and accessible (a11y) design

PROFESSIONAL EXPERIENCE

Lead Engineer | Cyber-Data Automations Ltd | Abuja, Nigeria

Feb 2026 – Present

- Design and build Node.js/TypeScript backend services for enterprise platforms, including ERP systems and national-scale logistics tooling, owning API design, PostgreSQL and MongoDB data models, Redis caching, authentication and RBAC end to end alongside the React/TypeScript frontends they serve.
- Own deployment architecture across cloud, VPS and client-hosted environments: Linux server configuration, Docker and Docker Compose, Nginx reverse proxy, SSL certificates, domain routing and secrets management.
- Build GitHub Actions CI/CD pipelines automating build, test, deployment and rollback, backed by monitoring, backups and operational runbooks for production systems.
- Lead architecture decisions, technical design and code review across client engagements, producing technical specifications, API documentation and implementation roadmaps for production deployments.

Consultant (Software Engineering) | Policy Innovation Centre | Abuja, Nigeria

May 2026 – Present

- Designed and built the Behavioural Insights Lab Research Management System (NestJS, Next.js, MongoDB): a race-safe booking engine using atomic conditional updates and multi-document transactions with write-conflict retry, verified at 6x concurrent writes per slot with zero overbooking; an isolated identity-vault database holding PII under separate credentials, with operational collections referencing participants only by pseudonymised ID for IRB compliance; and immutable audit logging of every mutating action.
- Designed and built the AI Ethics & Governance Fellowship LMS backend (NestJS, Prisma, PostgreSQL): 20 feature modules covering courses, assessments, certificates, live sessions, mentorship, capstones, forum, notifications and analytics, serving Next.js web and Expo mobile clients.

- Implemented JWT authentication in httpOnly cookies with server-side revocation, five-role RBAC enforced on every write, DTO validation, an append-only audit log, per-user rate limiting and Prisma-to-HTTP error mapping; built an LLM-powered learning assistant as a rate-limited proxy that keeps model keys off clients, and integrated Zoom Server-to-Server OAuth with HMAC-verified webhooks, Resend email, DigitalOcean Spaces and Sentry.
- Shipped code-generated OpenAPI/Swagger documentation, Vitest and Supertest end-to-end suites in GitHub Actions, scheduled jobs, and Docker deployment to DigitalOcean App Platform with Prisma migrations on every release, with a full technical handover and security runbook.
- Architected and built the GS-26 Gender & Inclusion Summit platform backend (NestJS, PostgreSQL, Prisma) serving a Next.js PWA and React Native iOS/Android apps for 3,000+ delegates: REST plus a WebSocket real-time layer fanned out through Redis pub/sub for live voting, trivia and session status; Redis caching and session store; JWT and RBAC with Redis-backed token blacklisting; and BullMQ workers for push notifications (FCM) and bulk operations.
- Designed the summit's live accessibility captioning pipeline: Deepgram streaming speech-to-text over WebSockets with per-session vocabulary boosting, distributed to delegate devices via Redis pub/sub, and the Anthropic Claude API for transcript cleanup and post-session summaries run asynchronously off the live path.

Full Stack Developer | Access Beta | Remote (Canadian client)

Sept 2025 – Feb 2026

- Built and maintained scalable REST APIs and microservices (Node.js, PostgreSQL, MongoDB, Redis) powering the MyKey insurance platform, with Docker-based deployments, performance monitoring and cost optimisation.
- Implemented real-time integration between frontend booking flows and backend fair-value and billing services, including rate checking, availability management and automated reporting dashboards for internal teams.
- Delivered the React/TypeScript Adjuster Dashboard, ALE Simulator and 24-step multi-tab claim submission flow, and the customer-facing MyKey Hotel Self-Serve booking portal for displaced policyholders.

Software Developer & ICT Engineer | Mercy Corps | Abuja, Nigeria

Aug 2024 – Sept 2025

- Built People Central (HR and contract management) and Ops Central (operations dashboard), internal full-stack systems for record-keeping, asset tracking and multi-site operational reporting.
- Supported the Microsoft 365, Intune and Entra ID infrastructure for the same user base and wrote PowerShell automation for reporting across 5 offices.

Software Developer | Modibbo Adama University | Yola, Nigeria

Jan 2021 – Jul 2024

- Designed and built the UniElect e-voting platform, including its backend, public voting interface and admin/results dashboards, with RBAC and audit trails for a 20,000+ user institutional environment.

Software Developer | Cyber-Data Automations Ltd | Abuja, Nigeria

Mar 2019 – Aug 2021

- Built MERN stack applications (Node.js/Express APIs with React frontends) with authentication for process automation clients.

SELECTED BACKEND & PLATFORM PROJECTS

- **AI Fellowship LMS Backend (Policy Innovation Centre):** NestJS/Prisma/PostgreSQL API with JWT auth, five-role RBAC, audit log, LLM learning-assistant proxy, Zoom and email integrations, OpenAPI docs, e2e test suite and Docker deployment on DigitalOcean.
- **Behavioural Insights Lab Research Management System:** Race-safe MongoDB booking engine with atomic updates and transactions, isolated PII vault with pseudonymised participant IDs, and full audit trail for IRB-aligned behavioural research operations.
- **GS-26 Gender & Inclusion Summit Platform:** Event-driven NestJS backend with WebSockets, Redis pub/sub, BullMQ and FCM push serving a PWA and React Native apps for 3,000+ delegates, with Deepgram and Claude AI captioning and summaries.
- **MyKey Adjuster Flow & Hotel Self-Serve (Access Beta, Canada):** REST APIs and microservices on Node.js, PostgreSQL, MongoDB and Redis behind a 24-step insurance adjuster workflow and a customer self-service booking portal with real-time rate and availability integration.
- **Maizube Waters ERP:** Full-stack ERP (React, Node.js, PostgreSQL) with 40+ modules across HR, Finance, Operations and Employee Self-Service, including a browser-based employee portal.

EDUCATION

- Master of Technology (MTech), Computer Science, Modibbo Adama University of Technology, Yola, Nigeria (2019–2023)
- Bachelor of Science (BSc), Computer Science, Kwararafa University, Wukari, Nigeria (2013–2018)

CERTIFICATIONS

- IBM: Containers with Docker, Kubernetes & OpenShift; Cloud Native, DevOps, Agile & NoSQL; Cloud Computing; Back-End Apps with Node.js & Express; Front-End Apps with React; Software Engineering. Google and Microsoft: IT Security: Defence Against the Digital Dark Arts; System Administration and IT Infrastructure Services; Cybersecurity and Privacy; Introduction to Secure Networking; Google, IBM and Microsoft IT Support Professional Certificates.