Dawit Bayou Kassie

Solutions Architect, Full-Stack, Cloud & DevOps Engineer

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PROFESSIONAL SUMMARY

Solutions architect and full-stack engineer with three-plus years building production systems: multi-tenant SaaS, enterprise internal platforms, centralized identity and ERP on Odoo. Strongest in Node.js, NestJS, TypeScript and PostgreSQL, with working range from UI/UX and frontend to CI/CD, cloud and applied AI. Known for making correctness checkable: rules enforced in the database, a test that proves each guarantee, and runbooks an operations team can follow. Owns projects end to end, from BRD/FRS/TDD authorship and architecture through build, deployment and verification, directing a mix of engineers and AI coding agents. A team worker: helps build teams, trains the people who operate and extend the systems, and learns from the people around them. BSc in Electrical & Computer Engineering.

TECHNICAL SKILLS

Backend & APIs: Node.js, NestJS, Express, TypeScript, REST and OpenAPI contracts (Zod), WebSockets; Python and Java (working knowledge)

Architecture: multi-tenant SaaS, row-level security, event-driven design, transactional outbox, Domain-Driven and Clean Architecture; BullMQ, Redis, Kafka, RabbitMQ

Identity & security: OpenID Connect and OAuth 2.0 (authorization code + PKCE, back-channel logout), SSO, RBAC, JWT, signed licences and releases, hash-chained audit logs, AES-256-GCM, OWASP practices; Keycloak, Authentik, Zitadel evaluated

Frontend & UI/UX: React, Next.js, TypeScript, Tailwind CSS, Zustand, Redux; UI/UX design in Figma; Adobe Illustrator, Photoshop and Premiere Pro

ERP & business systems: Odoo (custom addons, OpenID Connect integration), ERPNext customisation, custom ERP design: inventory, double-entry accounting, procurement, manufacturing operations, approval workflows, reports

Data: PostgreSQL (triggers, RLS, constraints, migrations), Drizzle, Prisma, TypeORM, Sequelize, MySQL, MongoDB, Redis, Meilisearch, pgvector

Cloud & DevOps: Git branching and code-review workflows, Docker, GitHub Actions, GitLab CI/CD, Nginx and Apache reverse proxies, Linux and Windows Server operations, backup and restore drills, Terraform, Kubernetes, AWS, Azure, Prometheus, Grafana

Applied AI: LLM integration, RAG and semantic search, agentic system design, AI-assisted development (Claude, Codex, Cursor) with proof-based verification

PROFESSIONAL EXPERIENCE

Solutions Architect & Full Stack Engineer **Kerchanshe Group** ***2026 – Present · Addis Ababa***

- Lead architecture and delivery of the group's internal platform: a document and records system (EDAMS), a guest management system, a retail ERP and a central single sign-on service, coordinating engineers and AI coding agents.
- Built the single sign-on provider as a custom OpenID Connect service: authorization code with PKCE, signed tokens, Active Directory integration, an admin console, an application launcher, and back-channel logout that ends a person's sessions in every connected system when they sign out or their account is deactivated.
- Designed licensing and release security for the platform: offline-signed licences that systems verify without calling home (including a rule that a system tied to SSO ends with SSO), signed releases, a tamper watcher, and owner-only operations kept out of any agent's permissions.
- Replaced ad-hoc deployments with one repeatable release process: preflight checks, settings applied at release time with automatic rollback, backups, and step-by-step runbooks for the operations team.
- Run a verification discipline: more than 3,000 automated tests across the three systems (SSO 834, EDAMS 1,639, GMS 605) with generated status reports checked in CI, and independent code reviews whose findings are fixed before release. After catching AI agents falsely reporting finished work, every task requires live request/response and SQL output as proof.
- Own architecture documentation, requirements specifications, executive reporting and internal training material.

Web Developer **Edge Communication Technologies P.L.C** *Sep 2025 – Oct 2025 · Addis Ababa*

- Built and maintained responsive corporate platforms and internal business applications for public-facing and operational use.
- Improved frontend consistency, deployment workflow and page load times by standardizing the component architecture.
- Scoped requirements with technical and operational teams and delivered production-ready systems on tight timelines.

Full Stack, Cloud & DevOps Engineer **Freelance** *Jan 2023 – 2025 · Remote*

- Designed, built and deployed full-stack applications for clients in several industries (MERN and PERN), from scoping to production launch.
- Built backend APIs, authentication and database schemas around each client's real read and write patterns.
- Set up container and CI/CD pipelines with Docker and GitHub Actions, and managed AWS and Azure deployments including networking, storage, compute and IAM.

SELECTED PROJECTS

Open-source rebuilds: Retail OS, JobPilot, Martronics, Library Management *github.com/DawitBK*
NestJS 12, Drizzle, PostgreSQL 18, Zod/OpenAPI, Next.js 16, Vitest, Turborepo

- **Retail OS:** point of sale, weighted-average inventory and double-entry accounting where the stock and the books cannot disagree: balanced journals enforced by a deferred database trigger, immutable posted history, money as integer minor units, and tests for concurrent sales and credit limits; sales analytics, reorder and sales forecasts, and a cash-flow statement.
- **JobPilot:** multi-tenant job-search platform with row-level security as the isolation boundary, an 18-state application machine in which no job application is submitted until a person approves it, a hash-chained audit trail, and SSRF-safe feed discovery.
- **Martronics and Library Management:** rebuilds of two earlier apps with rotating refresh tokens and reuse detection, optimistic concurrency, idempotent writes, a transactional outbox and an OpenAPI contract. All four apps sign in through OpenID Connect with back-channel logout.

MOS: manufacturing-operations ERP on Odoo 20 *private repository*
Python, Odoo 20, PostgreSQL, OpenID Connect, Node.js

- Customised Odoo 20 with 42 custom addons and more than 500 automated tests, covering gate and weighbridge, lab and quality, inbound receiving, procurement, inventory, approvals with separation of duties, payables, sales and production. Addons only, so Odoo itself stays upgradeable.
- Added OpenID Connect sign-in (PKCE, account binding, back-channel logout) as an addon, and wrote the requirements specification and architecture decision records the build follows.

Platform showcases: identity, document and guest management *github.com/DawitBK/sso-showcase, dms-showcase, gms-showcase*

- Public showcase repositories for the three platforms, each with architecture, screenshots and a live demo, while the source stays private. Live demos and a sandbox administrator login: dawitbkportfolio.vercel.app.

GMS: Guest Management Platform *employer system*
Node.js, Next.js, TypeScript, PostgreSQL, Redis, BullMQ, WebSockets, Docker

- Architected a multi-office visitor platform with seven roles, door-access hardware integration, OTP two-factor sign-in, QR/PIN credentials, ID scanning with watchlist screening, and an approval and escalation workflow with real-time delivery.
- Carried it through QA and UAT, trained internal IT staff, and took it live on the company's own server behind an Apache reverse proxy.

EDAMS: Document & Archive Management System *employer system*
Node.js, Express, Next.js, TypeScript, PostgreSQL, MinIO, Redis, BullMQ, Meilisearch

- Built the document lifecycle, full-text search and an opt-in AI assistant (tenant-scoped questions over documents and audit logs, summaries, metadata extraction), and the RBAC and audit layer: 53 permissions with per-document access rules, hash-chained logs, AES-256-GCM at rest, e-signatures, legal hold and retention scheduling.

EDUCATION & CERTIFICATIONS

BSc in Electrical & Computer Engineering: Addis Ababa Institute of Technology, 2022 · *Full Stack & DevOps Engineer Certification:* Addis Ababa University, 2025
Languages: English (fluent), Amharic (native)