NARDOS TILAHUN DUBALE



SYSTEMS ARCHITECT & SOFTWARE ENGINEER | STRUCTURAL ENGINEER

FULL-STACK PLATFORMS • CLOUD & BACKEND SERVICES • AI INTEGRATION

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PROFESSIONAL SUMMARY

Systems Architect and Software Engineer with an MSc in Computer Science from HiLCoE and extensive experience building full-stack platforms, Java Spring Boot microservices, high-throughput backend runtimes, scalable data systems, and AI-integrated architectures. Focuses on translating complex business requirements into maintainable software systems through explicit API contracts, structured domain data models, transactional consistency, asynchronous processing, and latency optimization. Combines hands-on implementation with systems-level technical governance, emphasizing correctness, reliability, security, and maintainability. Supported by a Computer Science Bridge degree, a BSc in Civil Engineering, and five years of engineering leadership experience.

CORE TECHNICAL COMPETENCIES

Software Architecture:	System Decomposition, Domain-Driven Design, API Contracts, Multi-Tenant Isolation, State Machines
Backend & API Design:	Java (Spring Boot, JPA), Python (FastAPI), Node.js, GraphQL, REST APIs, Webhooks, Event Streams
Frontend Engineering:	Next.js (App Router), React, TypeScript, Component Architecture, Responsive UI, Web Streams
Database & Data Systems:	PostgreSQL (pgvector), MySQL, Redis, MongoDB, Hibernate, Prisma ORM, Query Optimization
AI Engineering & Agents:	Agentic AI, Model Context Protocol (MCP), RAG & Vector Search, Model Routing, Web Streams
Infrastructure & Quality:	Linux, Docker, Maven, CI/CD Automation, Test Suites, Code Review, SWR Caching, Fault Isolation

FEATURED SOFTWARE SYSTEMS

Goal Cracker — AI-Powered Strategic Planning Platform | Lead Systems Architect

Next.js 16 (App Router), TypeScript, Prisma ORM, PostgreSQL (Supabase), Groq AI

goals.nardosdubale.com ↗

- Solves executive decision paralysis by decomposing complex goals into an interactive 5-step recursive roadmap with infinite drill-down hierarchy.
- Eliminates model downtime and hallucination through dynamic model routing across candidate Groq endpoints with strict JSON schema contracts.
- Prevents UI thread freezing during high-velocity inference via an asynchronous Web Stream accumulator that progressively renders live visual mind maps.

ZEE — Enterprise CMS & CRM Platform | Lead Full-Stack Architect

Next.js 15, TypeScript, Prisma ORM, PostgreSQL, Tailwind CSS v4

zeeappliancerepairllc.com ↗

- Eliminates lead drop-off and dispatch friction by integrating an automated customer CRM with online booking, intake triage, and service scheduling.
- Removes developer bottlenecks for content updates via a custom CMS supporting dynamic section reordering, multi-market catalogs, and diagnostic flows.
- Protects booking conversion rates during traffic surges by engineering an on-demand edge caching architecture with instant zero-downtime cache revalidation.

FinCore — Financial Amortization & Ledger Engine | Financial Systems Architect

React, Node.js, Express.js REST API, MySQL 8.0, D3.js Visualizations

Production Engine

- Engineers the end-to-end lending lifecycle, automating loan origination, repayment scheduling, and amortization with exact terminal balance closure.
- Protects ledger integrity during concurrent disbursements and repayments through atomic multi-table transaction blocks that maintain audit trails.
- Streamlines portfolio risk monitoring for loan officers by integrating real-time delinquency tracking, repayment telemetry, and dynamic D3.js analytics.

PROFESSIONAL EXPERIENCE

Production Systems Architecture | Lead Full-Stack & Systems Architect

Addis Ababa, Ethiopia • Enterprise Web Platforms & Systems Design

2023 – Present

- Lead application architecture and full-stack engineering across web platforms, establishing modular system boundaries and scalable cloud runtimes.
- Architect enterprise services utilizing Java Spring Boot, FastAPI, and Node.js with resilient connection pooling, edge caching, and event-driven pipelines.
- Direct engineering pods through architectural evaluations, code reviews, and CI/CD testing gates to ensure system reliability and maintainable delivery.

General Construction & SIS Engineering PLC | Civil Structural Engineer & Contractor

Addis Ababa, Ethiopia • Commercial & High-Rise Infrastructure

2016 – 2021

- Directed structural engineering calculations and construction supervision for commercial and high-rise building projects.
- Coordinated multidisciplinary teams, technical decisions, and operational risks in demanding engineering environments.

EDUCATION

MSc in Computer Science (3.95 CGPA) | HiLCoE (2023–2025)
Thesis: Lightweight Project Management Framework for Construction Firms
Core Focus: Systems Architecture, Database Technology, Network Security, NLP.

Computer Science Bridge Degree (4.00 CGPA) | HiLCoE (2021–2023)
Project: Construction Management Software (CS600, 6 Credits, Grade A)
Core Focus: Data Structures, Operating Systems, Object-Oriented Design.

BSc in Civil Engineering (3.84 CGPA) | Jimma Univ (2012–2016)
Capstone: Structural Design of 2B+G+12 High-Rise with Wind/Seismic Modeling
Core Focus: Structural Mechanics, Applied Mathematics, Finite Elements.

CERTIFICATIONS & LICENSE

- **ALX Software Engineering (Backend Systems)**
  12-Month Specialization • ID: 2JNLrSm5yY
- **ALX AI Starter Kit (Agentic Systems)**
  Workflow Engineering • ID: pf7ncHxyeN
- **Generative AI with AWS (Udacity)**
  AWS Bedrock Technologies • Verified
- **Data Analysis Nanodegree (Udacity)**
  Data Wrangling & Analytics • Verified
- **Full Stack MERN Program (Evangadi)**
  1,500+ Hours Coursework • ID: EV-MERN-2025
- **Practicing Professional Structural Engineer (PPSTE)**
  City Govt Construction Authority • Reg: PPSTE/5378

Credential Verification & Certified Academic Records
Degree transcripts, ALX/Udacity certificates, and PPSTE license verified online at:

nardosdubale.com/#dossier ↗