

DIONIS LUDOVICK NASUWA

Full-Stack Software Engineer | TypeScript · Node.js · React · Python

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PROFESSIONAL SUMMARY

Full-Stack Software Engineer with practical experience in **TypeScript, Node.js, Python, React**, and **containerized PostgreSQL/Docker environments**. Certified in **Full Stack Open (University of Helsinki, Grade 5/5)** and **Scrum Fundamentals (SFC™)**. Experienced in developing modular backend services, RESTful APIs, and responsive web applications through structured software internships and technical training, backed by a strong foundation in computer science and database design.

EDUCATION & CERTIFICATIONS

BSc in Computer Science — University of Dar es Salaam (CoICT) Expected Oct 2026
Full Stack Open Certification — University of Helsinki (Grade 5/5 Maximum Score) July 2026
Scrum Fundamentals Certified (SFC™) — SCRUMstudy Professional Certification July 2026
Key Coursework: Data Structures & Algorithms, Distributed Systems, Database Systems (SQL), Operating Systems & Linux Admin, Computer Networks, Systems Programming.

TECHNICAL EXPERIENCE

Software Engineering Collaborator • Mainstream Group (Technology Division) March 2026 – May 2026 | Dar es Salaam

- Engineered modular, service-oriented backend features using **TypeScript, Node.js, and Express/Fastify**, enhancing API data throughput and cross-service interoperability across production systems.
- Built secure **RESTful API endpoints** and optimized SQL data access layers, actively participating in bi-weekly Agile/Scrum sprint cycles, rigorous PR code reviews, and production release pipelines.

Software Development Trainee • UDICTI / StartHub Africa Partnership July 2025 – Sept 2025 | Dar es Salaam

- Developed the **Smart Cargo** cross-platform logistics platform using **Flutter, Django, and PostgreSQL**, connecting mobile clients to automated dispatch and cargo telemetry services.
- Implemented dynamic multi-factor pricing algorithms (distance matrix, weight tiering, fragility index) integrating **OpenStreetMap routing APIs** with bilingual Swahili/English localization.

IT Infrastructure Trainee • TPC Limited July 2024 – Sept 2024 | Kilimanjaro

- Configured managed network switches, deployed routers, and set static IP bindings to optimize enterprise LAN uptime and resolve hardware/OS diagnostics across enterprise workstations.

SELECTED TECHNICAL PROJECTS

Plaqode Platform — Distributed Monorepo Architecture for Digital Identity & QR Solutions
TypeScript • Next.js 14/15 • Fastify • Turborepo • Prisma ORM • Neon PostgreSQL • RS256 JWT • Docker

- Architected an 8-application monorepo using **Turborepo** and **pnpm workspaces**, decoupling digital-card, QR analytics, and ticketing domains; enabled up to 20 concurrent tasks while reducing redundant builds through remote caching.
- Designed a stateless **RS256 JWT** authentication service with **Fastify**, centralizing token issuance while enabling frontend applications to independently verify public-key signatures; eliminated cross-service authentication calls while preserving HttpOnly cookie isolation across **.plaqode.com** subdomains.
- Implemented isolated persistence boundaries using **Neon PostgreSQL** and dedicated **Prisma** clients per microservice, reducing schema coupling and enabling independent database migrations across service domains.
- Built a high-throughput QR analytics engine using **Fastify, Sharp** image processing, and **GeoIP tracking** over denormalized PostgreSQL tables; optimized telemetry aggregation to achieve sub-100 ms scan-query response times.

INTLEQ — Local LLM RAG & Vector Search System
Python • FastAPI • Ollama • pgvector • PostgreSQL • React/Vite • Docker

- Built an offline-first RAG platform using **Ollama (llama3.2:1b)** and **pgvector** embeddings, enabling private document Q&A without cloud API dependencies or external data egress.
- Engineered an asynchronous **FastAPI** backend using **asyncpg** and **pgvector** cosine-similarity search, achieving sub-second vector retrieval across concurrent user sessions.

Strata — PHP Legacy Modernization & Code Analysis Engine
Python 3.11+ • AST Parsing • Graph Theory (SCC) • Streamlit UI • Neo4j • Docker

- Engineered a static-analysis engine that transforms legacy PHP monoliths into **Abstract Syntax Trees (ASTs)** and dependency graphs, enabling architectural risk assessment for refactoring and microservice migration.
- Implemented **Strongly Connected Components (SCC)** clustering and interactive **Streamlit** visualizations to identify circular dependencies and calculate graph-centrality risk scores, enabling analysis of tightly coupled legacy components.

TECHNICAL SKILLS & COMPETENCIES

Languages: TypeScript, JavaScript (ES6+), Python, SQL, Dart, Bash
Frontend & UI: React, Next.js (App Router), Tailwind CSS, Redux Toolkit, Vite, Streamlit, HTML5/CSS3
Backend & APIs: Node.js, Fastify, Express.js, FastAPI, Django, RESTful APIs, Asymmetric RS256 JWT, Microservices
Databases & Vector: PostgreSQL, Neon, Redis, MySQL, pgvector, Prisma ORM, Supabase
DevOps & Tools: Docker, Turborepo, Git, GitHub Actions, Linux (Ubuntu/Debian), Nginx, Postman
Methodologies & CS: Agile / Scrum (SFC™ Certified), Object-Oriented Analysis & Design (OOAD), TDD, AST & Graph Theory