

DARWIN NIFRAS

Full-Stack Software Engineer • Type-Safe Web Applications & Systems Architecture

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SUMMARY

Full-stack software engineer who builds type-safe, data-driven web applications end to end — from schema design to deployment. As sole developer on **DRRM-ERS**, shipped an offline-first disaster-reporting system for PDRRMO Iloilo Province across **all 43 municipalities**, modeling a 30+ table schema and enforcing API-layer authorization; the work earned a government-approved pilot budget. Comfortable owning the full SDLC — requirements gathering, architecture, implementation, testing, deployment, and technical documentation — across **Python**, **TypeScript/JavaScript**, and SQL-backed systems. BS Information Systems, Cum Laude, West Visayas State University.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, PHP, Dart, C++
Web & Frontend: React, Next.js, Tailwind CSS, Progressive Web Apps (PWA)
Backend & Data: Node.js, REST APIs, tRPC, Prisma, PostgreSQL, MySQL, Supabase, Firebase, IndexedDB (Dexie.js), MongoDB Atlas
Practices: Agile/iterative delivery, root-cause analysis (RCA), API-layer authorization, technical documentation, Git/GitHub, CI/CD via Vercel
Mapping & Automation: Leaflet, GeoJSON, QGIS, n8n, Make, Zapier

WORK EXPERIENCE

Software Developer Intern — PDRRMO Iloilo Province Jan – Apr 2026

- Sole developer of **DRRM-ERS**, an **offline-first disaster-reporting system** digitizing the NDRRMC SitRep workflow across **all 43 municipalities** of Iloilo Province (486-hour internship).
- Engineered a **type-safe full-stack** application (**Next.js, tRPC, Prisma, Supabase/PostgreSQL**), modeling the 21 NDRRMC report annexes in a 30+ table schema with **versioned, non-destructive** report history for accountability.
- Diagnosed and fixed a **data-duplication bug** via root-cause analysis of a race condition under rapid connect/disconnect cycles; shipped an **offline submission queue** (Dexie.js/IndexedDB) with a sync **debounce + lock mechanism** to close it.
- Enforced **authorization at the API layer** with per-municipality data isolation; presented live to the PDRRMO head and division chiefs and earned an **approved budget for a 5-municipality pilot deployment**.

Freelance Software Developer — Self-Employed 2024 – Present

- Rogers Manokan (Aklan)** — commissioned a **poultry distribution & reconciliation system** (Next.js, Supabase/PostgreSQL) with **immutable transaction history enforced by database triggers** and a sealed daily-closure workflow with a full reopen audit trail.
- Deliver client builds end to end — requirements gathering, architecture, implementation, testing, and deployment on Vercel.

PROJECTS

REVOLT Physics — Interactive Physics E-Learning Platform (Client Contract) 2025 – 2026

- Architected a **6-module, 45-lesson** interactive physics platform mapped to **15 DepEd K-12 competency codes**, built on an extensible formula + scene registry powering 15+ SVG/Canvas/WebGL simulations (projectile motion, momentum, forces, waves, heat transfer).
- Shipped an installable **offline-first PWA** with a hand-rolled service worker (cache-first assets, network-first-with-fallback navigation) for instant reloads and full offline lesson access; a deterministic seeded-RNG renderer eliminated SSR/CSR hydration mismatches.
- Built real-time **Web Audio** features (beat-detection-driven visuals, live oscillator synthesis) and maintained living architecture docs defining every component/data contract — keeping a 60+ component codebase consistent across code reviews.

Tech: Next.js 16, React 19, Three.js/React Three Fiber, Tailwind CSS v4, Framer Motion, Service Workers/PWA

LOTIS — Disaster-Risk GIS Platform (Undergraduate Thesis) 2024

- Web-based **GIS platform mapping vulnerable populations (PWDs)** for emergency response; deployed as a prototype to two Iloilo municipalities with **above-average acceptability scores** from MDRRMO evaluators.
- Built Leaflet map visualization, **hierarchical household→family→individual** data modeling, and **PII-compliant role-based access**; integrated KoboToolbox, weather, and SMS APIs.

Tech: React (Vite), Leaflet, GeoJSON, Firebase, MongoDB Atlas, JavaScript

EDUCATION

West Visayas State University — College of ICT, La Paz, Iloilo City 2026
Bachelor of Science in Information Systems — Major in Business Application and Development, Cum Laude

ADDITIONAL

Leadership: Citizen Advancement Training (CAT) Officer, Curriculum Officer, and Student Council — West Visayas State University
Languages: English, Filipino, Hiligaynon