

MARLO BARUA

Backend Software Engineer · Workflow Automation & AI · .NET / Node

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SUMMARY

Backend Software Engineer who builds production systems that automate complex operational workflows. Designs scalable backend services (.NET 9 Web API, Clean Architecture, Domain-Driven Design) that integrate customer data, business rules, and multi-step processes — with a focus on reliability through well-designed APIs, background job queues, retries, real-time delivery, and error handling. Owns features end-to-end, from PostgreSQL schema and migrations through API design and deployment, and troubleshoots production issues down to root cause. Ships daily with an AI coding agent (Claude Code) driving implementation, review, and PR workflows.

TECHNICAL SKILLS

Backend & APIs: ASP.NET Core / .NET 9 Web API, REST API design, DDD & Clean Architecture, NestJS, Express, Spring Boot, Laravel, DelphiMVC

Workflow & Reliability: Background jobs & scheduling (Hangfire), queues & retries, audit logging, idempotency, error handling, monitoring, optimistic concurrency

Realtime & Async: SignalR, Socket.IO / WebSockets, Redis (caching & storage), event-driven / observer patterns

Data: PostgreSQL (Row-Level Security, indexing, query optimization, window functions), MySQL, MongoDB; EF Core, Aurelius / FireDAC ORM; Flyway migrations

Languages: C#, TypeScript, JavaScript, SQL, Python, Java, PHP, Delphi (Object Pascal)

Cloud & DevOps: Docker, GitHub Actions, GitHub Container Registry, AWS (EC2, S3, IAM), self-hosted Ubuntu CI/CD, Vercel, Railway

AI-Assisted Development: Agentic coding with Claude (Claude Code) as a daily production workflow — implementation, debugging, code review, and PRs

Frontend & Testing: Next.js / React, Vue 3 / Nuxt, Tailwind; xUnit / NUnit, DUnitX, Vitest, Playwright (E2E), integration testing

WORK EXPERIENCE

ActiveSystems Software Inc. — Software Engineer (Full-time)

Davao City · Jul 2024 — Present

Core member of the Research & Development team driving adoption of modern backend architecture and standardized engineering practices across multiple products.

ActiveWork — Multi-tenant HR / Payroll / Attendance SaaS (.NET 9 Web API + Next.js)

- **Architected** a multi-tenant backend with PostgreSQL Row-Level Security and tenant-resolution middleware, enforcing strict per-tenant data isolation across every service and background job — a foundation built for operational scale.
- **Automated** end-to-end operational workflows: a leave-management subsystem (configurable leave-type catalog, accrual engine, balance ledger, half-day filing, PH statutory rules, multi-level approval routing, year-end forecasting) and a payroll overtime approval workflow with audit logging, tenant-wide queues, and optimistic UI with rollback.
- **Improved reliability** with scheduled and recurring background jobs (Hangfire), retry handling, Redis-backed caching, real-time notifications over SignalR, and versioned schema delivery via Flyway migrations.
- **Integrated** business rules and compliance into the backend — disbursement features (bank-file generation, payslip history) and statutory BIR-2316 PDF generation via PDFsharp.
- **Built** JWT authentication and a role-based access control (RBAC) system with searchable field-level encryption for sensitive employee records.
- **Owned** the CI/CD pipeline end-to-end (GitHub Actions + Docker + GitHub Container Registry) as platform release owner, automating builds and deployments to an on-premise Ubuntu staging host and an AWS EC2 production server — improving release reliability and repeatability.
- **Ships production code daily** driving an AI coding agent (Claude Code) through implementation, debugging, code review, and PR workflows across the platform's API and web repositories.

ActivePOS XA — BIR-accredited Point-of-Sale platform serving 20+ tenant businesses (Delphi, DDD, Aurelius / FireDAC ORM)

- **Served** as the first engineer on client and operational requirements — scoping system updates, feature requests, and production issues directly with the business, then translating them into backend changes and coordinating rollout.
- **Troubleshooted** and resolved a critical ORM concurrency / FireDAC connection-pooling defect (dangling object manager), improving data-processing throughput by ~60% and stabilizing the system under load.
- **Implemented** a Socket.IO API adapter using the observer pattern to stream real-time updates between POS terminals and backend services.
- **Designed** BIR-compliant reporting modules (end-of-shift, end-of-day, sales, and tax summaries) with optimized SQL — indexing, joins, and window functions — plus PDF export, satisfying the fiscal-reporting requirements for BIR accreditation.

- **Refactored** core domains (sales orders, discounts, payment transactions, report management) toward Clean Architecture / DDD, raising modularity and test coverage with DUnitX unit and integration tests.

Department of Social Welfare and Development — Full-Stack Developer (Internship)

Davao City · Sep 2023 – Dec 2023

Led a small team building a full-stack records-management and analytics dashboard spanning five welfare divisions.

- **Designed** a Laravel 8 REST API (Sanctum token auth, role-based access) with full CRUD per division and soft-delete archival with restore, backed by version-history models maintaining a complete edit-history audit trail.
- **Built** server-side aggregation endpoints (by cluster, sector, mode of delivery, records-per-month) consumed by a Vue 3 SPA over Axios REST APIs, with one-click Excel export; deployed to Vercel.
- **Managed** the team GitHub repository — reviewing pull requests and resolving merge conflicts.

Global Staff Network — Project-Based Web Developer (Part-time)

Davao City · Apr 2024 – May 2024

- **Optimized** website performance, improving load times and lifting overall SEO ranking; delivered data-driven enhancement recommendations from analytics and user feedback.

IdeaHub IT Solutions Provider Inc. — Frontend Developer (Internship)

Davao City · Jun 2023 – Aug 2023

- **Contributed** to a complex business web system through debugging, feature development, documentation, and maintenance; extended custom WordPress functionality and built responsive email templates with MJML.

EDUCATION

University of Southeastern Philippines

Davao City · Aug 2020 – Jun 2024

B.S. in Information Technology, Major in Information Security

- **Graduated Magna Cum Laude**; consistent Dean's Lister (1st – 4th year).
- Competed in the Huawei ICT Competition (Networking) and the Mindanao IT Olympiad; completed the Zuiit Web Development Workshop.