NGUYỄN VĂN NAM

SENIOR BACKEND ENGINEER | GOLANG | DISTRIBUTED SYSTEMS | MICROSERVICES

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3+ Years Experience (Production Backend & Tech Lead)

PROFESSIONAL SUMMARY

Senior Backend Engineer & Tech Lead with 3+ years of hands-on experience designing, building, and operating high-concurrency production systems using **Golang** and **Java**, with deep expertise in **Clean Architecture**, **Dependency Injection**, Microservices (20+ services), Real-time WebSocket, Payment, and Cloud/DevOps (**AWS**, Docker, CI/CD). Proven track record of spearheading monolith-to-microservices migrations, engineering critical real-time matching and GPS tracking engines, and staying calm under pressure during high-severity production incidents. Proactively built internal engineering automation platforms—including an **AI Automated Code Reviewer**, an in-house **Deployment Manager**, and a **Centralized Monitoring Engine**—drastically reducing operational overhead, accelerating sprint velocity, and mentoring engineers to production readiness.

CORE TECHNICAL SKILLS

- **Languages:** Golang (Core/Primary), Java, SQL, Shell Scripting, PHP
- **Frameworks & ORM:** Go (Gin, Fiber, GORM, sqlc), gRPC, Protobuf, Spring Boot
- **Architecture & Design:** Clean Architecture, Dependency Injection (DI), Microservices (20+ services), Event-Driven
- **Concurrency & Reliability:** Goroutines & Channels, Distributed Lock (Redis Redlock), Idempotency, Race Prevention
- **Databases & Storage:** MySQL, PostgreSQL (Query Tuning, Indexing, Schema Modeling), ElasticSearch
- **Caching & Messaging:** Redis (Pub/Sub, Streams, Distributed Caching), RabbitMQ, Kafka, Cron Workers
- **Cloud, DevOps & Infra:** AWS (EC2, RDS, Redis, S3), Docker, GitLab CI/CD, Linux, Nginx, Zero-Downtime Rollout
- **Internal Tooling & Auto:** AI Automated Code Reviewer, Deployment Manager, Centralized Monitor (Monitor Central)
- **Modern AI & Leadership:** LLM Integration, Model Context Protocol (MCP), Sprint Estimation, Daily PR Review, Mentoring

PROFESSIONAL EXPERIENCE

Backend Tech Lead / Senior Backend Engineer – BUTL (Bạn Uống Tôi Lái / AloTaiXe / Bship)

2023 – Present | Ho Chi Minh City

On-demand designated-driver, ride-hailing and logistics platform serving hundreds of thousands of users and thousands of active concurrent drivers.

- **Architecture, Clean Code & Team Leadership**
  - Spearheaded architectural transition from monolith to **20+ microservices** leveraging **Golang** (REST, gRPC, Protobuf) and **Clean Architecture** with strict **Dependency Injection (DI)**, reducing API latency by **~40%** and maintaining **99.9% uptime**.
  - Led engineering sprint estimation and workload management; translated complex business requirements into decomposed technical tasks, ensuring on-time delivery across multi-service epics.
  - Designed and owned core mission-critical domains: trip management, driver dispatching, real-time GPS tracking, payments, e-invoicing, multi-channel notification, and automated deployment infrastructure.
- **Driver Matching Engine & Real-time Systems**
  - Engineered an independent **Matching Service** utilizing spatial algorithms based on GPS coordinates, dynamic search radiuses, driver availability, rating tiers, and status to complete driver-passenger pairing in **< 2 seconds**.
  - Architected high-throughput **Tracking Service** and **WebSocket Gateway** streaming live GPS coordinates from mobile driver clients to customers with sub-200ms latency under high concurrency.
  - Orchestrated concurrent driver requests and state transitions with atomic locking to eliminate race conditions and double-dispatch.
- **Trip Lifecycle & State Machine Management**
  - Engineered a robust **Finite State Machine (FSM)** governing entire trip lifecycles (Creation → Searching → Acceptance → En Route → Completion → Settlement), eliminating illegal state mutations.
  - Constructed asynchronous background workers and recovery handlers to automatically heal abnormal states (cancellations, timeouts, network drops, orphaned trips).

- **Payment & Financial Core Systems**
  - Designed and maintained **Core Payment Service** integrating direct banking (**BIDV**) and e-wallets (**ZaloPay, VNPay**), processing high-value daily transactions with strict ACID adherence.
  - Enforced **Idempotency Keys** and distributed locks across all payment, refund, and wallet balance operations to strictly prevent double-spending and duplicate monetary transactions.
- **Distributed Systems, Concurrency Control & Incident Composure**
  - Applied **Redis-based Distributed Locking (Redlock)** and fine-grained mutexes to safeguard critical transactional boundaries across distributed services.
  - Proactively diagnosed and mitigated high-concurrency production pitfalls: **goroutine leaks, deadlocks, race conditions, memory spikes, duplicate event processing, and N+1 query overheads**.
  - Maintained composure during high-severity production outages; led methodical root-cause investigations under pressure (resolving port conflicts, process panics, disk saturation) and created postmortem playbooks that reduced MTTR by >50%.
- **Database Engineering & Performance Optimization**
  - Modeled schema and optimized queries on **MySQL & PostgreSQL** for high-volume operational tables; designed compound indexes and tuned execution plans for intensive reporting and real-time reads.
  - Implemented multi-tier caching architectures with **Redis** (Distributed Cache, Pub/Sub, Streams) offloading over 70% of redundant database queries during peak operational hours.
- **DevOps, Cloud (AWS) & Internal Productivity Platforms**
  - Deployed containerized services across **Docker, GitLab CI/CD, and AWS (EC2, RDS, Redis, S3)**, shrinking release cycles from hours to minutes.
  - Engineered an in-house **Deployment Manager Platform**: automated release windows, dynamic configuration synchronization, pre-flight health validations, zero-downtime rolling updates, and one-click rollback across 20+ microservices.
  - Built **Centralized Monitor (`monitor-central`)**: custom daemon tracking VPS system health, supervisorctl services, port liveness, and Goroutine spikes with instant Telegram alerts, eliminating routine manual checks.
- **Engineering Standards, AI Code Review & Mentorship**
  - Standardized company-wide Go SDK (`common-go` / `definitions-service`) enforcing Clean Architecture, structured JSON logging, JWT auth middleware, centralized error handling, and unified gRPC/Protobuf contracts.
  - Built an internal **AI Automated Code Reviewer**: integrated LLMs with Git diff AST analysis to auto-check PRs against architectural guidelines and domain rules (e.g. matching logic, concurrency traps), cutting 60%+ manual review load.
  - Mentored junior/fresher engineers 1-on-1 on Go concurrency models, Clean Architecture, and unit testing; organized internal workshops on Goroutines, Channels, and Redis patterns (100% of mentees passed probation).

SELECTED PROJECTS

Automated AI Code Reviewer & PR Quality Gate
Golang | LLM Integration | AST Diff Parsing | GitLab Webhooks

- Built automated code review bot analyzing Git diffs against custom domain rules, Goroutine concurrency traps, and architectural guidelines.
- Automated PR feedback before human review, slashing code review cycle time by 60% and catching critical logic bugs early.

In-House Deployment Manager Platform
Golang | GitLab CI/CD | Docker | Linux | Shell Scripting

- Automated build, environment configuration, health validation, and zero-downtime rolling deployments for 20+ microservices.
- Enforced release governance, audit logs, and instantaneous one-click rollback, drastically cutting manual ops workload.

Centralized System Monitor (`monitor-central`)
Golang | Linux Telemetry | Supervisorctl | Telegram Bot | Redis

- Developed high-performance daemon monitoring VPS resource metrics (CPU, RAM, disk), supervisor processes, and Goroutine counts.
- Dispatched real-time diagnostic alerts via Telegram Bot, eliminating routine manual checks and significantly reducing MTTR.

AI Customer Support & LLM Gateway
Golang | Gemini / Claude | MCP | Redis | MySQL

- Engineered an AI agent orchestration system with Model Context Protocol (MCP) servers enabling LLMs to safely query live backend data.
- Automated repetitive customer inquiry handling and ticket triaging, reducing CS operational workload by over 50%.

TECHNICAL MENTORING

Independent Mentor & Instructor (2022 – Present):

- Guided IT students, Freshers & career-switchers in mastering practical Go & Spring Boot backend development.
- Conducted 1-on-1 technical mock interviews, CV optimization, and architectural problem-solving walkthroughs.

EDUCATION & CORE LEADERSHIP

HUTECH University — Graduated 2024

Bachelor of Information Technology

Core Leadership: Clean Architecture & DI, Sprint Estimation & Task Allocation, Daily PR Quality Gate, High-Pressure Incident Mitigation, Team Mentoring.