

Dmitrii Shmanatov

Senior Backend Developer (Go / PHP)

 Ulyanovsk, Remote  +7 960 366-16-05  hire@l3373.xyz
 <https://t.me/l3373>

Senior Backend Engineer / Technical Consultant

Dec 2025 — Present · 7 mos

Independent Engineering Practice / Sole Proprietor · <https://l3373.xyz>

Developing a distributed Open Source task processing platform as a lightweight async engine for PHP/Swoole and Go. The system is fully implemented, tested, and deployed as a live demo (180 files, 10.5k LOC, strict PHPStan Level 10). Published a detailed architectural breakdown on Habr.

- ▶ Multi-stack architecture: Go (high-load network proxies, distributed semaphores, concurrency, API) / PHP 8.4 (async Swoole 6) / NATS JetStream / Redis.
- ▶ Low-level networking: Designed a custom binary WebSocket protocol on Go's standard library with minimal overhead (9 bytes per frame).
- ▶ Concurrency & Lock-free: Implemented distributed semaphores via PHP Atomics in Shared Memory + Go/Redis pool with Lua scripts to eliminate data races.
- ▶ Profiling & Benchmarks: Benchmarked core performance — local semaphore ~0.5 μ s per op, distributed ~380 μ s. Results documented in GitHub Wiki.
- ▶ Observability & Tracing: Integrated distributed tracing with OpenTelemetry and Jaeger 2.17 directly into the kernel layer.
- ▶ Guaranteed Delivery: Built a fault-tolerant message bus on NATS JetStream with at-least-once delivery semantics.
- ▶ API, Security & Linting: Designed REST API (OpenAPI/Swagger), JWT authorization, strict golangci-lint rules, and comprehensive test coverage.

- Infrastructure: Configured CI/CD pipelines (GitHub Actions, multi-stage Docker) and deployed a stable demo environment.

Links: [GitHub \(★ 8 / 🍴 1\)](#) · [Habr \(architecture breakdown\)](#) · [Live Demo](#) · [Excelentor \(★ 3\)](#) · [Packagist](#)

PHP 8.4 Swoole 6 Go NATS JetStream Redis/Lua
OpenTelemetry Jaeger Prometheus Grafana Docker Linux

Senior Backend Engineer

Dec 2023 — Dec 2025 · 2 yrs 1 mo

[Kalkul.Ru](#) · [Moscow](#)

Responsible for platform core stability, production performance bottleneck elimination, and legacy code refactoring.

- Designed a real-time analytics system on ClickHouse + Redis for slow query monitoring.
- Integrated backend with ML computer vision services via queues (RabbitMQ/Kafka), developed custom detectors (Python/FastAPI).
- Decomposed "God Object" models, refactored API layer, introduced strict typing through DTOs.
- Contributed to WebSDK development, introduced isolated Swagger sandboxes for different API types.
- Mentored middle developers and conducted cross-team code reviews.

PHP 8.x Laravel MariaDB RabbitMQ ClickHouse Manticore
Kafka Python/FastAPI Docker

Senior Backend Engineer

Aug 2022 — Jul 2023 · 1 yr

[Edugram.com](#) · [Saint Petersburg](#)

Designed APIs and automated content processing across Go, Python, and PHP stacks. Configured asynchronous communication between distributed services.

- Developed asynchronous ETL parsers in Go for streaming multi-page PDF extraction.

- ▶ Configured cross-layer interaction (Go, Python/FastAPI, PHP 8) via REST API.
- ▶ Created strict API contracts using OpenAPI/Swagger.
- ▶ Implemented end-to-end JWT authorization for secure data exchange.

PHP Laravel Go Python/FastAPI PostgreSQL Redis

Docker

Senior Backend Engineer

Apr 2021 — Jan 2022 · 10 mos

Arkadia, JSC · Saint Petersburg

Designed and optimized diagnostic algorithms for the UK's National Health Service (NHS) in a high-risk enterprise environment with strict compliance. 40% core Drools algorithm development, 60% BDD testing and release management.

- ▶ Developed medical algorithms on Drools/MVEL with custom engine extensions.
- ▶ Designed MongoDB schemas with strict JSON Schema validation.
- ▶ Implemented end-to-end BDD testing (Cucumber, Java, PHP) for rule verification.
- ▶ Release management, code review, secure production deployment.

PHP Laravel Java MongoDB RabbitMQ Redis Docker

Drools Cucumber

Senior Backend Engineer / System Architect / Acting Lead

Sep 2013 — Sep 2019 · 6 yrs 1 mo

DeliveryBizPro · USA

Core scaling, high-load architecture, preparation for acquisition. Worked directly with the CEO without middle management for all years. Brought the product to readiness for sale to a strategic investor (\$4.5M deal, 600k+ clients). Ensured successful technical audit (Due Diligence).

- ▶ Migrated the platform to OOP architecture (Symfony/Doctrine) with Multi-tenancy and full DB isolation.

- ▶ Rebuilt storage from MyISAM to InnoDB (Barracuda format), dramatically reducing infrastructure load.
- ▶ Designed and implemented a background processing layer (Beanstalk → Redis).
- ▶ Designed a flexible payment layer integrating 20+ international gateways.
- ▶ Formed and led a distributed backend development team, directly coordinated critical production incident responses.

PHP Symfony Doctrine MySQL Redis Beanstalk Nginx

Linux Zabbix Jenkins

Founding Engineer / Full-Stack Developer

Mar 2006 — Aug 2013 · 7 yrs 6 mos

DeliveryBizPro · USA

Single-handedly designed and developed the MVP and initial major versions of the US logistics platform from scratch. Solely covered the full cycle: from database design to frontend and DevOps.

- ▶ Developed a routing engine based on Ant Colony Optimization (150+ points in real time).
- ▶ Designed a dispatcher interface for operational route collection and optimization.
- ▶ Integrated Sphinx Search for instant full-text indexing across multi-tenant stores.
- ▶ Wrote an Android driver app with full offline mode and bidirectional data synchronization.
- ▶ Fully administered all Linux server infrastructure (Nginx, PHP-FPM, Supervisor).

PHP MySQL Java (Android SDK) JavaScript Sphinx Search

Linux Nginx

Senior Software Engineer

Feb 2001 — Feb 2006 · 5 yrs 1 mo

X-Cart · Ulyanovsk

Core developer of the e-commerce platform almost from the company's founding. Designed architecture for one of the first commercial PHP systems for the global market (USA, Europe).

- ▶ Designed extensible core architecture and scaled the platform for explosive e-commerce growth.
- ▶ Integrated early global payment gateways (PayPal, Authorize.Net).
- ▶ Developed custom modules for large international clients.

SKILLS

Languages: PHP 8.4 · Swoole · Laravel · Symfony · Go · Python · Java · JavaScript

Databases: MySQL · PostgreSQL · Redis · ClickHouse · MongoDB · Manticore

Queues & Buses: NATS · RabbitMQ · Apache Kafka · Beanstalk

Infrastructure: Docker · Linux · Nginx · Git · CI/CD (GitHub Actions)

API & Protocols: REST API · WebSocket · gRPC · OpenAPI/Swagger

Architecture: Highload · Distributed Systems · Microservices · Monolith Decomposition

Monitoring: Prometheus · Grafana · Jaeger · OpenTelemetry

Data Engineering: ETL · ClickHouse · Manticore · Redis

ABOUT ME

⚡ **Architecture and reliability are my daily reality, not a heroic achievement.** I think in data structures, concurrency models, and network protocols, not in single-language silos. I value stable production, strict discipline, and direct communication.

Foundation & Systems Knowledge: Started with ZX Spectrum assembler, then C/C++ and 386DX-40 assembly (direct memory manipulation, double buffering). Deep understanding of Linux, IPC (OS signals, Unix sockets, shared memory), and runtimes.

Stack & Engineering: Go (distributed event-driven systems, custom network proxies) and PHP 8.4 (high-performance async Swoole, Laravel).

Highload & Concurrency: Designing async systems on goroutines and channels. Thread-safe distributed synchronization patterns, semaphores, Circuit Breaker, and Rate Limiting in Shared Memory.

Legacy & Refactoring: 15+ years decomposing heavy monoliths into isolated microservices. Eliminating God Objects, designing clean DTO structures and strict error contracts.

Experience Capitalization: Built products from scratch to a successful \$4.5M acquisition by a US strategic investor (passed full Due Diligence). I know how healthy and sick code looks under load.

AI Practice: I use LLMs strictly as a controlled tool for routine automation (tests, schemas, documentation), maintaining full manual control over architecture and codebase.

Languages: Russian — Native, English — B2 (13 years working directly with English-speaking management in the USA)

Legal Status: Sole Proprietor (Ready for B2B contracts)

References: Judd Payne, Former CEO & Founder (DeliveryBizPro) · Maksim Kiryushkin, CTO (Kalkul.Ru)