

Uladzislau Rybakou

Backend / Full Stack Engineer

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PROFILE

Backend and Full Stack Engineer with 5+ years of commercial experience specializing in TypeScript and Node.js (NestJS, Hono, Express). Track record of designing high-throughput REST and WebSocket APIs, tuning PostgreSQL and ClickHouse workloads, and operating fault-tolerant event pipelines with Kafka, BullMQ, and Redis. Experienced in zero-downtime schema migrations, legacy monolith decomposition, React web applications, and production AI pipelines (multimodal OCR, semantic vector search with `pgvector`, and multi-stage LLM orchestration). Creator of three live production systems: scezka.com, botsplit.com, and neyronews.com.

TECHNICAL SKILLS

Backend & APIs:	TypeScript · Node.js · NestJS · Hono · Express · REST APIs · WebSockets · Microservices
Data & Messaging:	PostgreSQL · pgvector · PostGIS · ClickHouse · Redis · Kafka · BullMQ · Drizzle ORM · SQL
Frontend & Web:	React 19 · Vite · TanStack Query · Zustand · Tailwind CSS · Telegram Mini Apps · MapLibre GL
AI Engineering:	LLM Orchestration · Multimodal AI (VLM) · RAG / pgvector · Structured Outputs · Claude Code & MCP
Cloud & DevOps:	AWS (ECS, Lambda, RDS, SQS) · GCP (Cloud Run, Cloud SQL) · Cloudflare · Docker · Terraform · CI/CD (GitHub Actions, GitLab CI) · Jest / Vitest

EMPLOYMENT HISTORY

Backend Developer | Blask, Tbilisi

Jul 2024 - Jul 2026

- **High-Load Analytical Data & Query Tuning:** Designed and optimized ClickHouse analytical queries, aggregations, and table schemas for a B2B iGaming market analytics platform (alongside PostgreSQL for transactional service state), tuning query performance and executing zero-downtime data migrations across microservices.
- **Event-Driven Pipelines & Resiliency:** Engineered asynchronous ingestion and cross-service synchronization pipelines using Kafka, BullMQ, and Redis with idempotent consumers, exponential backoff retries, and Dead Letter Queues (DLQ) to prevent event loss under load spikes.
- **API Architecture & Contract Testing:** Built high-throughput NestJS (TypeScript) REST services with strict DTO validation and rate limiting, maintaining system reliability through automated unit and E2E test suites in Jest.
- **Legacy Decomposition & Tooling:** Extracted tightly coupled domain modules into isolated services and automated schema validation, test generation, and cross-service refactoring using agentic AI workflows (Claude Code, MCP).

Full Stack Developer | DIBSCapital, Tel Aviv

Jun 2022 - Jun 2024

- **Fintech & KYC Integrations:** Integrated core real-estate investment workflows with regulated financial providers (North Capital escrow/KYC, InvestReady accreditation, and Stripe payments), implementing webhook signature verification, idempotency keys, and compliance audit trails.
- **AWS Cloud Infrastructure:** Deployed and operated containerized Node.js backend workloads across AWS (ECS, Lambda, RDS, SQS), configuring queue-backed transaction processing and automated failure alerting.
- **Full-Stack Product Delivery:** Built investor onboarding flows, portfolio dashboards, and document signing interfaces in React backed by typed Node.js and PostgreSQL REST APIs.

Backend Developer | Nublecraft

Apr 2021 - Jun 2022

- **Monolith Refactoring:** Decomposed legacy Node.js monolithic modules into modular, testable service layers with structured error handling and request validation while keeping production traffic uninterrupted.
- **REST API & Database Optimization:** Built and documented Node.js REST endpoints for internal and third-party consumers, optimizing slow SQL queries and database connection pooling.

Live Video Streaming Engineer | Specmedia, Minsk

Mar 2017 - Jun 2020

- **Streaming Infrastructure:** Operated low-latency live video streaming pipelines (RTMP, HLS), media transcoders, and network relays for high-concurrency broadcast events.

FEATURED PROJECTS

Ścieżka | scezka.com

Production / Live

Full-scale outdoor route-planning platform for cycling, running, and hiking with an interactive GIS map studio and a custom-built routing engine.

- **Monorepo & Spatial Backend:** Architected a TypeScript Turborepo workspace (`Node.js 24`, `Hono`, `Drizzle ORM`, `React 19`) backed by PostgreSQL with `PostGIS` spatial indexing, Redis caching, and Strava OAuth2 webhook synchronization on GCP Cloud Run.
- **Custom Rust Routing Engine:** Built a high-performance routing service in Rust (`Axum`, `Tokio`, memory-mapped OpenStreetMap PBF graphs, and DEM elevation tiles) for low-latency multi-modal pathfinding and surface analysis.
- **Interactive GIS Workspace:** Engineered a browser mapping studio using `MapLibre GL`, `Zustand` + `Zundo` temporal undo/redo state, client-side geometry processing, GPX pipelines, and interactive elevation and gradient profiling.

TypeScript · Node.js · Hono · React 19 · PostgreSQL / PostGIS · Drizzle ORM · Rust · MapLibre GL · Turborepo · GCP

SplitBot | botsplit.com

Production / Live

Production Telegram Mini App and bot for collaborative group expense splitting with zero-onboarding authentication and multimodal receipt recognition.

- **Multimodal AI Receipt OCR:** Built a Vision-Language Model (VLM) pipeline with strict JSON schema validation and arithmetic reconciliation that extracts receipt line items, taxes, and tips and translates dish names across 21 languages in a single inference pass.
- **Real-Time Collaborative Sync:** Engineered live multi-user item claiming over WebSockets with Redis Pub/Sub fanout, commutative state updates, and zero-onboarding Telegram WebApp `HMAC-SHA256` (`initData`) authentication.
- **Financial Ledger & Settlement:** Designed a multi-currency ledger using exact `NUMERIC` arithmetic, proportional tax/tip distribution, FX rate caching, and automated peer-to-peer settlement calculation, deployed on GCP Cloud Run and Cloudflare via Terraform.

TypeScript · React 19 · Vite · WebSockets · PostgreSQL · Redis · Multimodal AI (VLM) · Telegram Mini App · Terraform

NeyroNews | neyronews.com

Production / Live

Autonomous AI news curation and broadcasting pipeline delivering filtered technical digests with Human-in-the-Loop editorial moderation.

- **Semantic Deduplication Pipeline:** Continuously polls 140+ technical and industry sources and eliminates cross-source duplicates in two stages: canonical URL `SHA-256` hashing followed by PostgreSQL `pgvector` cosine distance checks (`< 0.08` threshold across a 72h rolling window) using local `bge-m3` embeddings.
- **Two-Stage LLM Evaluation Funnel:** Combines a lightweight triage scorer (grading technical substance 1-10 to reject marketing fluff) with full-text extraction and structured LLM synthesis into publication-ready digests.
- **HITL Moderation & Concurrency:** Dispatches drafts to editors via Telegram inline callbacks with atomic state transitions, quorum rules, and a scheduled broadcast engine using PostgreSQL `SELECT ... FOR UPDATE SKIP LOCKED` to prevent race conditions.

PostgreSQL · pgvector · LLM Orchestration · bge-m3 Embeddings · Telegram Bot API · Cloudflare Pages · Docker

EDUCATION

Engineer, Institute of Information Technologies BSUIR, Minsk 2013 - 2018

Information Technologies and Systems in Logistics

Rolling Scopes School Jun 2019 - 2020

JavaScript / TypeScript / Node.js Specialization