

Tomas Mihalicka

Distributed systems architect focused on event-driven design, system evolution, and messaging infrastructure.

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location: **Bratislava / Slovakia**

Professional Summary

Software engineer with over 12 years of development experience, specializing in distributed systems architecture for the past 6+ years. Focused on building high-throughput, resilient platforms using event-driven design, messaging infrastructure, and Domain-Driven Design (DDD). Known for aligning architecture with real-world business complexity, emphasizing observability, modularity, and long-term maintainability.

Core Expertise

- **Architecture & Design:** Domain-Driven Design (DDD), Microservices, Modular Monoliths, Hexagonal Architecture, CQRS, Event Sourcing, Scalable Messaging Patterns, Final Tagless
- **Messaging & Distributed Systems:** Event-Driven Architecture, Asynchronous Communication, Service Decoupling, Fault Tolerance, JSON Schema Contracts, Kafka-Based Message Routing
- **Cloud Infrastructure & DevOps:** AWS, Azure, Docker, Kubernetes, Terraform, OpenTofu, Infrastructure as Code, CI/CD with GitHub Actions
- **Observability & Reliability:** Monitoring with OTEL, Prometheus, Grafana; Tracing, Error Tracking, Operational Insights, Sentry, BetterStack
- **Security & Compliance:** PKI, PCI DSS, ECC, Secure-by-Design Architecture, GDPR/DMCA Compliance, Audit-Ready Systems
- **Technical Strategy & Governance:** Architecture Reviews, Tradeoff Analysis, Engineering Standards, System Evolution Planning
- **Leadership & Mentorship:** Technical Hiring, Onboarding, Cross-Team Workshops, Team Development, Mentoring

Experience

Monadial – **Owner**

2025 / Bratislava, Slovakia

- Independent architecture consultant focused on scalable, event-driven, and domain-aligned systems
- Specialization in DDD consulting and event-based system design
- Led architecture audits, domain modeling workshops, and system modernization initiatives

Pixel Federation – **Staff Software Engineer / Software Architect**

2019 – 2025 / Bratislava, Slovakia

- Led the architecture of a distributed internal payment and reporting system used across game titles
- Designed messaging infrastructure and system-wide event-driven patterns for scalability and traceability
- Integrated multiple payment providers and ensured financial system auditability through event sourcing
- Co-responsible for the overall architecture direction of the company's backend systems, especially messaging, services orchestration, and infrastructure consistency
- Mentored engineers, conducted architecture reviews, and led hiring for technical roles

Pixel Federation – **Senior Data Engineer**

2017 – 2019 / Bratislava, Slovakia

- Built scalable ETL pipelines with Spark and Hadoop for analytics on high-volume player and transaction data
- Developed internal data tooling and contributed to infrastructure that supported real-time data products
- Contributed to DWH and Spark migration initiatives

Pixel Federation – **Lead Software Engineer**

2015 – 2017 / Bratislava, Slovakia

- Led internal tools and architecture for cross-team platforms (HR, dashboards, localization). Managed a team of six developers.

Websupport – **Backend Developer**

2014 / Bratislava, Slovakia

- Developed REST APIs and backend systems in PHP/Laravel. Participated in system automation for hosting infrastructure.

Phirational s.r.o. – **Full-stack Developer & Administrator**

2012 – 2014 / Trnava, Slovakia

- Built web apps using Laravel and Node.js. Administered Linux and VM-based infrastructure.

ZUNO Bank AG (2011–2012) – **Web Developer**

2011 – 2012 / Bratislava, Slovakia

- Developed internal banking systems using J2EE, PHP, and Oracle. Worked on frontend and backend in a regulated environment.

Technologies

- **Architecture & Messaging:** Kafka, RabbitMQ, Amazon SQS/SNS, CQRS, Event Sourcing, Hexagonal Architecture
- **Cloud & Infrastructure:** AWS, Azure, GCP, Docker, Kubernetes, Terraform, GitHub Actions
- **Observability & Monitoring:** OpenTelemetry (OTEL), Prometheus, Grafana
- **Data & Storage:** PostgreSQL, MySQL, Redis, MongoDB, Spark, Hadoop
- **Frameworks & Tooling:** Cats, Cats Effect, Symfony, Spring, .NET Core, Doctrine
- **Programming Languages:** Scala, PHP, TypeScript, Python, Java, C#, Swift, Go

Key Projects

Monadial – **Distributed Event Processing & Routing Platform**

- Designed and implemented a distributed event-routing platform built on Apache Kafka, optimized for high-throughput, low-latency environments
- Architected a topology-aware system with pluggable routing strategies, stream orchestration, and dynamic fan-out capabilities
- Introduced component supervision using FSM principles for resilience and lifecycle management of long-running processors
- Developed message delivery guarantees, fallback paths, and backpressure-aware flow control for reliable processing

Pixel Federation – **Distributed Payment Platform**

- Designed and led implementation of a distributed internal payment and reporting system
- Integrated multiple payment providers and unified transactional models
- Applied event sourcing to ensure full traceability and audit readiness
- Created decoupled service orchestration via messaging

Pixel Federation – **Event-Driven Service Communication Backbone**

- Co-designed asynchronous communication across services with SQS/SNS fan-out
- Defined JSON Schema message contracts, validation rules, and versioning standards
- Built shared libraries for consistent message consumption and publishing
- Introduced delivery guarantees and failure handling patterns across teams

Pixel Federation – **Internal Currency Banking System**

- Developed the core banking engine for Pixel Coin virtual currency
- Used DDD and CQRS for wallet, transaction, and reconciliation domains
- Ensured concurrency safety, recovery logic, and accounting-level traceability