Alexander Kolesen

Principal Engineer and Infrastructure Architect

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Summary

Principal Engineer and Infrastructure Architect with 20 years of experience building backend systems and the cloud infrastructure that runs them, for high-load, business-critical products. Scaled web systems to 1M+ concurrent users and a ride-hailing backend to 40K daily trips; built continuous delivery for 100+ microservices sustaining 600 deploys per day. Deep hands-on expertise in backend engineering, data processing, AWS, Infrastructure as Code, CI/CD. Takes end-to-end ownership in fast-moving startups: technical decisions under ambiguity, going beyond the role when the product needs it.

Core Skills

Cloud & Infrastructure: AWS, Linux, Networking, Kubernetes, Infrastructure as Code, Serverless

Languages (programming): Clojure, Python, Golang, Java/Kotlin, C, C++

Databases: RDBMS, NoSQL/schemaless, column storages, highly-available, highly-performant, consistent databases and storages

Architecture & Service Management: requirements gathering and solution design for business needs, service ownership and production readiness, incident and change management, vendor evaluation and coordination, stakeholder communication, team leadership

Work Experience

Independent Infrastructure & Platform Consultant 2019 – present
Warsaw, PL (remote)

Long-form engagements for five clients across AAA gaming, networking, health-tech, public sector, and consumer mobile; currently building a clinical data platform and an AI-powered video-processing pipeline.

Backend Developer / Cloud Architect 2025 – present
Clinical data platform for healthcare providers

Designing and building the platform end to end: ETL and data-processing pipelines for clinical data (HL7/FHIR), written in Clojure and Python, on AWS (Step Functions, ECS, Batch, Lambda, S3, RDS), with the full infrastructure lifecycle managed in Terraform.
Tools: `Clojure, Python, Terraform, PostgreSQL, HL7/FHIR, AWS`

Backend Developer / Infrastructure Engineer 2024+
Teleprompter — AI-powered video-processing pipeline

Building a video-processing pipeline applying AI video tools, running on AWS EC2 with Spot instances; the API, pipeline orchestration, and scheduler are written in Clojure.
Tools: `Clojure, Terraform, AWS: EC2, Spot`

Principal Site Reliability Engineer 2023 – 2025
People Can Fly — AAA game developer

- Built and launched the foundation for a self-hosted online game platform serving 600+ developers across 4 new titles.
- Built the content pipeline for staging environments, cutting content developers' iteration time from days to minutes.
- Defined the target architecture with external game-hosting providers (Unity Multiplay, AWS GameLift) and coordinated implementation with their teams.
- Owned production readiness — deployments, observability, reliability requirements — and built the platform's CI/CD pipeline.

Tools: `AWS, Terraform, Java, Kotlin, GitHub Actions, GameLift, Multiplay`

Software Developer (part-time) 2022 – 2023
Actmobile — wscp, a maximum-throughput network transfer tool

- Designed a dual-channel transfer model (UDP for data, TCP for retransmits) that outperformed standard TCP by 2–10× in bandwidth utilization on lossy links.
- Integrated LwIP, a userspace TCP/IP stack, into the company's C-based VPN product and stabilized it in production.

Tools: `Linux, C, LwIP, TCP, UDP`

Senior Backend Developer / Principal Infrastructure Engineer (part-time) 2021 – 2022
Palta — health-tech startup incubator

- Designed and implemented a multi-tenant analytics event pipeline (API Gateway → Kinesis Firehose → S3 → SQS → Lambda → Snowflake) processing 50M events/day and absorbing 5× load spikes, at one-tenth the cost of Amplitude.
- Built an HTTP callbacks system with retries and guaranteed delivery; designed payments infrastructure for rapid load scaling.

Tools: `PostgreSQL, Kafka, Snowflake, Terraform, Atlantis, Grafana, AWS`

Software Developer 2019 – 2021
Danish Ministry of Taxation (via Flexiana) — national property taxation system in Clojure/ClojureScript

- Sped up the CD pipeline 4–10× by introducing granular per-component deployments, and bridged the gap between developers and infrastructure engineers.
- Maintained and extended several Clojure services to eliminate performance bottlenecks.

Tools: `Clojure, PostgreSQL, Jenkins, Terraform, Atlantis, AWS`

Solo Backend Engineer (part-time) 2019
Wanna Kicks — AR try-on mobile app

Built the catalog backend and an encrypted, multi-versioned, multi-tenant distribution system delivering 200GB of 3D assets over CloudFront, plus event collection and SQL analytics on Kinesis Firehose and Athena.
Tools: `Python, Chalice, Terraform, AWS`

Senior Software Developer and Principal Infrastructure Engineer 2015 – 2018
Juno — NYC ride-sharing service, acquired by Gett; onsite in Minsk, BY

- Scaled from a fresh team to 40K daily trips in under one year, operating in the highly competitive NYC market and serving millions of users.
- Built the infrastructure platform and deployment tooling in Clojure.
- Established continuous delivery of 100+ backend microservices, running several times a day and sometimes exceeding 600 deploys daily, ensuring deployment was never a bottleneck.
- Worked on capacity planning and fault tolerance, isolating parts of the computing cluster into separate shards.
- Led a team of 5 infrastructure engineers; the DevOps team served 40 core backend engineers and 15 QA engineers.
- Provided developers with clear tooling to inspect production logs and metrics, and to maintain their own alert sets.

Tools: `Linux, Clojure, Golang, Python, MySQL/InnoDB, PostgreSQL, MongoDB, Docker, GoCD, nginx, Elasticsearch, Kibana, Prometheus, Grafana, AWS: EC2, ECS, RDS, S3, ElastiCache, Route 53`

Earlier — Infrastructure & Backend Engineering 2007 – 2015

Wargaming.net (World of Tanks) — Built deployment tooling and the web infrastructure team; scaled web systems to 1M+ concurrent players across 5 regions (RU, EU, US, CN×2).
Kontur, Inc. (GIS service provider) — Built backend infrastructure for Kontur Platform Services (Kubernetes, Java, nginx).
Dyn Inc. (DNS, via EPAM, acquired by Oracle) — Designed an API bridging legacy and new DNS systems; built Docker + Chef + Jenkins pipelines.
Iron.io (cloud platform; freelance, 2013 – 2015) — Migrated MongoDB clusters, automated monitoring, extended deployment infrastructure.

Education

M.Sc. in Artificial Intelligence / Information System Security 2004 – 2009
Belarusian State University of Informatics and Radioelectronics, Faculty of Information Systems and Management

Master's thesis: *"Intellectual collection and analysis of Internet service statistics in real time under high load"*