

Dan Radu Dragomir

Software Architect

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[Portfolio](#) • [LinkedIn](#) • [GitHub](#) • [PINES Framework](#)

PROFILE

Software Architect focused on building and stabilizing complex distributed systems under real-world constraints (high load, unreliable data, evolving requirements).

Over 20 years of experience designing, building, and evolving complex systems across aviation, gaming, streaming, and telecommunications industries, spanning from bare-metal infrastructure to modern microservices architectures.

Recognized for the ability to build systems from scratch, restructure failing architectures, and deliver scalable, reliable solutions in high-pressure and fast-moving environments.

Comfortable operating in fast-moving environments where systems are evolving, incomplete, or under pressure.

CORE CAPABILITIES

System Architecture & Design

- Distributed systems and microservices architecture
- Domain modeling, system decomposition, service boundaries
- Legacy system transformation (monolith → scalable systems)

Real-Time & Data Processing

- Multi-protocol ingestion (AMQP, MQTT, TCP)
- Asynchronous workflows and pipeline orchestration
- State synchronization across distributed environments

Computation & Logic Systems

- API-driven computation platforms (gRPC, service orchestration)
- Complex state machines and decision systems
- Data validation, transformation, and consistency

Performance & Scalability

- High-load systems (concurrency, throughput, latency optimization)
- Resource-aware system design and scaling strategies

Infrastructure & Systems Engineering

- Bare-metal infrastructure and datacenter environments
- Containerized systems (Docker, distributed deployments)
- Networking (BGP, OSPF, MPLS, DNS, routing)

Technical Leadership

- Architecture ownership and decision-making
- Mentoring and developer growth
- Cross-team coordination and system alignment

TECHNICAL STACK & ENGINEERING FOCUS

Backend Engineering

- **PHP 7/8, Symfony, ReactPHP** — primary backend stack used for production systems ranging from conventional service-oriented applications to long-running asynchronous workers and high-concurrency services. Experience includes API platforms, distributed processing, workflow orchestration, state management, and performance-sensitive backend components.

Python Integration & Computation Systems

- **Python** — primarily used for integration with specialized computation engines and independently evolving services. Designed service boundaries and interoperability layers exposing Python-based computation through **gRPC**, keeping domain computation separated from application and presentation layers.

Data & Geospatial Processing

- **PostgreSQL, PostGIS, Redis** — relational persistence, high-frequency operational data, caching, transient state, and geospatial workloads. PostGIS used for real-time spatial processing, drone tracking, restricted-zone validation, and collision detection against dynamically defined geographic constraints.

Messaging, Streaming & Asynchronous Processing

- **RabbitMQ, Kafka, AMQP, MQTT, TCP** — event-driven and asynchronous communication across distributed systems. Designed ingestion and processing pipelines handling heterogeneous data sources, burst traffic, unreliable producers, message normalization, asynchronous state propagation, and long-running workflows.

Distributed Systems & APIs

- **gRPC, REST APIs, service-oriented and microservices architectures** — design of service boundaries, API contracts, synchronous and asynchronous communication patterns, system decomposition, and integration between independently developed components. Experience includes both greenfield platforms and gradual decomposition of tightly coupled legacy systems.

Infrastructure & Deployment

- **Docker, Ansible** — containerized development and production environments, custom service images, repeatable deployments, and distributed infrastructure automation. Experience spans modern containerized platforms as well as earlier bare-metal and datacenter environments.

Systems & Network Engineering

- Strong infrastructure background including **Linux/Unix, TCP/IP, DNS, BGP, OSPF, MPLS**, with experience designing, operating, troubleshooting, and evolving systems from network and hardware layers through backend services and distributed applications.

PROFESSIONAL EXPERIENCE

Senior Software Engineer / Architect — Sim Soft Distribution

Sept 2023 – Sept 2025 | Cluj-Napoca, Romania

- Designed and implemented a distributed, real-time airspace monitoring platform integrating heterogeneous sensor networks and unreliable data sources
- Architected multi-protocol ingestion pipelines (AMQP, MQTT, TCP), ensuring reliable processing and state propagation across distributed services
- Developed dynamic scaling orchestration layer (“sensor gateway”) handling burst traffic and partial system failures
- Implemented geospatial processing and collision detection using PostGIS
- Led full redesign of an aviation computation platform, exposing a Python-based engine via gRPC and replacing legacy database-bound logic

Founder / Principal Software Engineer — Scientific Discovery Elements

2019 – Present | Braşov, Romania

- Founded and operated an independent architecture and consulting practice across aviation, enterprise, and data-heavy domains
- Led end-to-end delivery as architect and primary technical decision-maker across multiple client engagements
- Designed distributed systems, data pipelines, and computation platforms under evolving requirements
- Mentored developers and established technical training programs

Team Lead / Software Architect — High-Tech Systems & Software

Jun 2022 – Jun 2023 | Bucharest, Romania

- Led architectural migration of a legacy medical platform from monolith to microservices under continuous production usage
- Defined service boundaries, API contracts, and data flow enabling gradual system decoupling
- Introduced containerized environments and structured deployment workflows
- Delivered architectural foundations under conflicting constraints and evolving requirements

Senior Software Engineer / Architect — Orendt Studios GmbH

Aug 2020 – Feb 2022 | Frankfurt, Germany

- Designed and built an asynchronous content processing platform for interactive video generation
- Orchestrated multi-step workflows integrating external rendering systems via TCP communication
- Implemented state tracking and job lifecycle management for long-running processes
- Ensured consistency between user-defined configurations and generated outputs

Senior Software Engineer — MindGeek

Aug 2019 – Jul 2020 | Montréal, Canada

- Contributed to high-load microservices architecture under extreme concurrency constraints
- Developed asynchronous PHP prototype exploring non-blocking I/O and TCP communication patterns
- Worked on core backend services handling high-throughput production traffic
- Supported performance optimization and system reliability in real-world load conditions

Software Engineer — Bandai Namco Entertainment Romania

Jan 2018 – Feb 2019 | Bucharest, Romania

- Built backend systems for live mobile gaming platforms
- Designed gameplay systems including state management and probability-based reward mechanics
- Developed high-performance log processing tools for operational workflows
- Handled live production updates and system stabilization under user-facing conditions

Software Engineer → Technical Lead / Acting CTO — Aim4Solutions

Nov 2011 – Sept 2017 | Braşov, Romania

- Built and automated a bare-metal infrastructure platform replacing manual server management
- Designed a custom internal development framework standardizing engineering practices
- Led backend architecture decisions across projects and transitioned into technical leadership
- Mentored developers and scaled internal engineering capabilities

Founder / Software & Network Engineer — Advanced Office Management

Jul 2007 – Nov 2011 | Braşov, Romania

- Delivered full-stack web and hosting solutions for multiple clients
- Designed and deployed complete server and network infrastructures
- Built systems in pre-cloud environments managing full lifecycle from hardware to application

Network Engineer → NOC → Technical Project Manager — RCS & RDS

Dec 2004 – Apr 2007 | Braşov, Romania

- Progressed from support to NOC and project leadership roles in telecom infrastructure
- Managed enterprise networks using MPLS, BGP, and OSPF routing protocols
- Led regional FTTH/FTTB rollout across multiple counties

Earlier Roles (PlusNet, Marka Construcţii, Romintrade)

1998 – 2004

- Built and operated infrastructure, hosting platforms, and enterprise systems
- Designed network architectures and managed full system lifecycles

PROJECTS

- Aviation computation platform (BADA) — NDA
 - Real-time airspace monitoring platform — NDA
 - LiquidRazor Framework (PHP ecosystem)
 - PINES Framework (organizational systems model)
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EDUCATION

Bachelor's Degree in Computer Science
Spiru Haret University

LANGUAGES

English (Professional)
Romanian (Native)
Italian (Intermediate)
French (Intermediate)