

Rodrigo Luís Manso

Senior Software Engineer | Software Architect | Tech Lead

Backend .NET/C# | Industrial Data Platforms | Applied AI | Application Security

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Professional Summary

Software engineer and architect with a career spanning 25 years in public administration, healthcare and life sciences. Combine hands-on .NET/C# engineering with technical leadership, distributed data platforms, applied AI and application security. AI journey spans ML research leadership at ICI, industrial data engineering and agent-assisted software delivery. Collaborate daily in English with global pharmaceutical teams since July 2021. Guide architecture and integration decisions across project teams of 4-15 people.

Technical Skills

Backend and architecture: C#, .NET, Python, TypeScript/Node.js, SQL, REST APIs, gRPC, microservices, RabbitMQ/MassTransit, Redis, state machines, observability (Elasticsearch, Prometheus, Grafana).

Industrial and cloud data: AVEVA PI System and Asset Framework (AF), Wonderware, SQL Server, Airflow, Parquet, Azure (Event Hubs, Files, Tables, DevOps), AWS S3, Google Cloud (Cloud Storage, BigQuery, Pub/Sub).

Applied AI: Generative AI, Retrieval-Augmented Generation (RAG), Model Context Protocol (MCP), AI agents, Claude Code, Ollama, Chroma.

Security and platform: Static Application Security Testing (SAST), Software Composition Analysis (SCA), SonarQube, Checkmarx, Black Duck, DefectDojo, Linux, Docker, GitHub, Azure DevOps.

Professional Experience

Senior Software Engineer / Software Architect | Founder

DeepCode Inteligência de Dados | Remote, Brazil | Jan 2021 - Present

Consulting practice through which I deliver hands-on engineering, architecture and technical leadership to two long-term clients. Engagements and selected deliveries:

Pharmaceutical manufacturing (international) | Jul 2021 - Present

Software Architect and Senior Software Developer in a global team spanning India, the UK, the US and Brazil; industrial data integration and application security in a regulated environment.

Industrial data integration platform | 2022 - Present

- Architected a configurable data integration platform: source-specific readers collect user-selected data, formatters process and format it, and destination-specific writers deliver it through ad hoc or real-time workflows.
- Kept pluggable readers, formatters, writers and schedulers decoupled through RabbitMQ/MassTransit messaging and state machines for communication and state updates, with audit trails and retries.
- Rearchitected the monolithic platform for large workloads using distributed .NET services, bounded parallelism and chunking, enabling terabyte-scale extractions in production on 16 GB RAM servers. gRPC packets were measured 20% smaller than the REST API baseline.

Application security and release readiness

- Lead pre-release IP Ready processes for two products with SonarQube, Black Duck and Checkmarx; remediate SAST and open-source findings, including high/critical issues, or document technical justifications.

Professional Experience (continued)

DeepCode Inteligência de Dados | Jan 2021 - Present

Pharmaceutical manufacturing (international) - continued

Industrial audit reporting | Mar 2025 - Present

- Developed consolidated AVEVA PI/AF audit trails with inclusion/exclusion filters, historical recovery and real-time collection, replacing separate searches on individual servers.

Healthcare software company (Brazil) | Jan 2021 - Present

Solution architecture and development; RAG supports a platform with 20+ years of evolution. Sole developer of the notification and teleconsultation platforms.

Notification platform | Jan 2026 - Present (in production)

- Reduced dispatch of 500,000 messages from approximately 1-2 days to under 30 minutes, measured through provider acknowledgment, not device delivery.
- Built Airflow-triggered producers, a queueing API and Rebus senders with retries and FCM integration. Correlation IDs link Elasticsearch logs; Prometheus/Grafana monitor services.

Enterprise RAG and AI-assisted development | Jan 2026 - Present

- Built Chroma RAG across six modules of the client system, using database artifacts, Moodle content, code analysis and business metadata, with automated weekly refreshes. Qwen 2.5 Coder via Ollama supports project understanding without fine-tuning.
- Validated pilot: four AI-assisted changes shipped to production, each reported at 1-3 hours of development versus senior-developer estimates of 3-4 days for development, testing and documentation.

Teleconsultation platform | Jan 2025 - Present (deployment in progress)

- Led my first AI-generated application implementation, directing architecture, review and validation. Built WebRTC/WebSocket signaling, Coturn STUN/TURN, participant roles, file sharing and administrative controls; restrictive-network validation in progress.

DeepCode product | Jan 2026 - Present

- Architect and develop a code-generation product with Claude Code headless, GitHub/Azure DevOps integration and human-reviewed pull requests; deployment in progress.
- Developed an MCP server exposing knowledge search and work-item tools to agents, with bearer-token authentication, tool scopes, tenant context and call auditing.

Technical leadership across engagements

- Guide architecture, integration standards and technical decisions across project teams of 4-15 people, while contributing directly to implementation.
- Drove a recent technical decision to remove credentials from source code; develop tooling that helps teams apply security practices consistently.

Security tooling and team enablement

- Built a self-service Linux scanning pipeline with DefectDojo, SonarQube, Semgrep, Gype, Trivy and CycloneDX/OSV, integrated with Azure. Teams can run scans without tool expertise; dashboards consolidate findings by product, severity and SLA.

Earlier Professional Experience

Earlier technical foundation: Delphi, VB.NET, Java/EJB, AngularJS, Oracle, SQL Server, MySQL and SVN.

ICI employment period: Feb 2016 - Dec 2020; selected roles below.

Innovation Manager | Instituto das Cidades Inteligentes (ICI) | Curitiba | 2017 - 2019

- Led the emerging-technology research and prototyping team: machine learning, computer vision, Internet of Things (IoT), chatbots, software agents and blockchain applied to smart-city and public-administration use cases.
- Studied ML algorithms, data preparation, model training and pipelines. Led the innovation team that won first place at the Sebrae Analytics Hackathon (2019).
- Managed the institute's innovation committee and its relationship with Curitiba's innovation ecosystem, including the Tecnoparque project.
- Curated startups for Smart City Expo Curitiba (2019); mentor at Google Business Group Curitiba and the Mondelēz Hackathon (2019).

Public Administration Consultant | Instituto das Cidades Inteligentes (ICI) | Curitiba | 2016 - 2017

- Defined business rules and coordinated development teams for public administration systems; delivered training and deployment to end-user organizations.

Public Administration Consultant | RGM Informática / Minauro Informática | Curitiba | 2010 - Jan 2016

- Rolled out public management systems for the city governments of Contagem (MG), Osasco (SP) and Teresina (PI): budgeting and budget execution, finance, accounting and public procurement.
- In parallel, consulting engagements in the financial sector: HSBC (via BRQ), Banco Rendimento (via DTS) and Banco Fibra (via MetaIT).

Software Architect | Fastmedic | Curitiba | 2006 - 2010

- Architecture and development of public healthcare management systems.

Analyst / Developer / Database Administrator | Perform Informática | Curitiba | 2002 - 2005

- Development, database administration and rollout of public management systems for the city governments of Curitiba, São Paulo and Fortaleza.

Independent Projects

F1 Data Platform (prototypes in development): Designed an eight-component telemetry and AI lab with a Python historical-data pipeline and Rust historian v1. Documented synthetic-data exercise covers ingestion, storage, queries and restart recovery. Simulator integration, reproducible replay and controlled AI experiments remain pending.

Data Intelligence (in development): Rust components for order-book reconstruction, Parquet replay and backtesting; logistic-regression training with chronological splits; C# NinjaTrader integration and Linux/Windows CI workflows. Connected execution remains under validation.

PIMS - Industrial Historian (in development): Rust historian with WAL/Parquet storage, hash-chained audit trails and requirement-linked tests.

Education and Recognition

Electrical Engineering studies (degree not completed). Continuous technical training, including penetration-testing methods applied to secure application design.

Languages

Portuguese: native. English: professional working proficiency; five years of daily meetings, technical presentations and collaboration with global teams and clients.