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# FABRICIO DUBRA

**Staff Software Engineer**

Working remotely from Luján de Cuyo, Argentina

## ABOUT ME

Staff Software Engineer with over 18 years of experience architecting, scaling, and operating mission-critical distributed systems, real-time platforms, and high-throughput data pipelines.

Throughout my career—from engineering foundational pay-per-click ad systems at MercadoLibre (MercadoClics) to serving as Founding Engineer and IT Lead at Docturno across nearly 7 years—I have specialized in solving complex bottlenecks across databases, APIs, and event-driven architectures.

Currently Staff Software Engineer at TitanX (following the acquisition of FrontSpin), owning the telephony real-time call ingestion, and CRM synchronization architecture under a spec-driven, AI-augmented engineering workflow.

## EXPERIENCE

**TitanX**
Feb 2026 - Present
Full-time

**Staff Software Engineer**

Joined TitanX following the acquisition of FrontSpin to own the telephony real-time call ingestion, and CRM synchronization architecture.

**Post-Acquisition Platform Integration:** Architected the asynchronous AMQP messaging pipeline and standardized TypeScript message contracts that bridged FrontSpin CRM data with TitanX's dialer platform without downtime.

**Platform Architecture & Identity:** Re-engineered the platform identity model from user-centric to seat-based, building durable queue-backed provisioning and role-based capability boundaries to eliminate cross-tenant reassignment and offboarding failures.

**Reliability & Drift Reconciliation:** Architected the platform reliability layer—implementing distributed concurrency locks, periodic drift detection sweeps, automated churn breakers, and scaling bulk phone provisioning to a 500-phone async batch capacity.

**Call Ingestion & Event Pipelines:** Designed and deployed AMQP-based streaming workers for real-time Call Detail Record (CDR) ingestion with dead-lettering, automated retries, and recording storage lifecycle management with signed URL tokenized access.

**Distributed CRM Write-Back:** Built an idempotent outbox pipeline with per-client sweep orchestrators and payload persistence before dispatch, synchronizing high-volume call activity back to external CRM systems including Salesforce.

**Deliverability & Phone Reputation:** Integrated multi-provider phone reputation monitoring with webhook intake, scan lifecycle tracking, and automated routing preference to protect outbound connect rates.

**Full-Stack Delivery & Multi-Tenant Security:** Shipped end-to-end call handling and ring-facing product features in NestJS and TypeScript (inline contact editing, campaign activity feeds, live call controls) backed by PostgreSQL Row-Level Security (RLS), SECURITY INVOKER stored procedures, and automated database test suites.

**FrontSpin**
Dec 2024 - Jan 2026
Full-time

**Tech Lead**

Served as technical lead and architectural owner for a 5-person engineering team across 4 core repositories until the company's acquisition by TitanX.

**Elasticsearch Search Microservice:** Designed and launched a greenfield search service in NodeJs/TypeScript on Elasticsearch 9 featuring bulk/incremental indexing, global search with instant suggestions, and request tracing, migrating millions of CRM records off legacy SQL queries.

**Database Optimization:** Diagnosed and eliminated critical database query bottlenecks in high-volume contact lists on PostgreSQL, rewriting complex queries without CTEs and tuning partial indexes behind tenant-level feature flags.

**Custom Fields Platform & CSV Import Engine:** Architected a cross-service custom fields platform (spanning NEST APIs, Public API, and CRM) and rebuilt the bulk CSV import engine from the ground up, drastically reducing heavy Postgr eSQL and Redis query load while improving production visibility and throughput.

**CRM Decoupling & Public APIs:** Spearheaded the architectural migration decoupling FrontSpin into a standalone CRM platform; designed the external Public API, developer delivery framework, and high-performance multi-threaded database purge routines.

**Technical Leadership & Hiring:** Authored the technical design (architecture, data model, and rollout plan) for every core initiative before implementation, conducted ~10 technical interviews resulting in 2 engineering hires, mentored junior-to-senior engineers through structured code and design reviews, and introduced AI agent context specifications to standardize codebase knowledge.

**FrontSpin**
Aug 2024 - Nov 2024
Full-time

**Senior Software Engineer**

Spearheaded core platform development for FrontSpin's sales acceleration platform.

**Parallel Dialer Engine:** Architected the core engine for a multi-line Parallel Dialer across Java and NodeJs services, designing concurrency-safe session management, multi-contact retrieval, and backward-compatible tenant rollout.

**Email Infrastructure:** Hardened third-party email provider integrations under production load; implemented queue-based webhook ingestion, exponential backoff rate limiting, and Redis connection pool leak remedies.

**Clapps**
Jan 2024 - Jul 2024
Freelance

**Tech Lead (Freelance)**

Consulted with Chilean enterprise clients in gastronomy and legal tech, helping them migrate legacy applications to the cloud. Work included architectural analysis, bottleneck mitigation, proposing technical upgrades, and documenting best practices for their IT teams.

**Clapps**
Mar 2023 - Dec 2023
Full-time

**Tech Lead (Contractor)**

Led the development of Atbis, a digital prescription and signing SaaS product. Revamped the Express.JS/React/MongoDB codebase for high clarity, security, and maintainability. Key achievements include implementing chained PKI digital certificate signing, creating a self-service portal with a public OAuth2 API, and launching a developer documentation portal.

**Docturno**
Jul 2021 - Nov 2022
Full-time

**Lead Senior Full-Stack Web Developer**

Directed IT operations and database scaling initiatives for an established digital healthcare booking platform. Conducted technical interviews to grow the engineering team and personally onboarded, trained, and mentored every developer who joined Docturno. Optimized complex MongoDB aggregations and indexing strategies to sustain rapid user adoption while maintaining consistent low-latency performance as user volume scaled.

**Docturno**
Jan 2016 - Jun 2021
Full-time

**Senior Full-Stack Web Developer (Founding Engineer)**

Founding Engineer—and for extended periods the sole full-time developer—responsible for building and scaling Docturno from greenfield concept into a nationwide healthcare scheduling platform. Designed RESTful microservices (Play Framework / Java, Express.js, MongoDB) and cloud deployment infrastructure on AWS.

**Grayshirts**
Sep 2012 - Dec 2015
Full-time

**Java Full-Stack Web Developer**

Worked on multi-Play Framework (Java) projects, primarily for two startups: Leadiak (digital marketing) and Mangowin (job listings), and participated in ~10 technical interviews to help evaluate and grow the engineering team.

**Freelance**
Mar 2012 - Nov 2012
Freelance

**Python Full-Stack Web Developer (Freelance)**

Built web applications for artists using Pyramid and Flask (Python), with custom frontends.

**Vostu**
Nov 2011 - Feb 2012
Full-time

**Java Semi-Senior / Web Frontend Developer**

Developed server and web frontend game logic for Java-based multiplayer casual games (Culminaria, CandyDash, ShakingMegas).

**Mouila**
Aug 2011 - Oct 2011
Full-time

**Java Semi-Senior Developer**

Worked on a Java/Python migration project to consolidate multiple billing and notification services into a centralized platform.

**Band of coders**
Jan 2011 - Jul 2011
Full-time

**Java Game Developer**

Engineered multiplayer gameplay and persistence features for the Java server of TallTowns, a web-based 3D virtual world.

**MercadoLibre**
Jul 2009 - Dec 2010
Full-time

**Analyst Web Developer**

Scaled and optimized MercadoClics, the high-traffic pay-per-click advertising platform that established the technical foundation for MercadoLibre's advertising ecosystem, solving enterprise data persistence and throughput challenges.

**MercadoLibre**
Dec 2007 - Jun 2009
Full-time

**Assistant Web Developer**

Engineered account security enhancements in Java, then joined the foundational MercadoClics team developing high-volume ad auction services on Oracle Database.

## FEATURED ARCHITECTURAL SYSTEMS

TITANX · DISTRIBUTED STATE MACHINE · CONSUMERKEY

### Carrier State Drift Reconciliation & Bulk Phone Provisioning

**Challenge:** Asynchronous carrier platform state drifted during multi-client provisioning, producing phantom lines and carrier rejections.

**Solution:** Architected a distributed state machine with Redis concurrency locks, 10-minute periodic sweepers, durable outbox queuing, and automated churn breakers. Scaled phone onboarding to a 500-phone async/across batch capacity.

**Result:** Eliminated orphaned carrier resources and achieved zero-drift multi-carrier synchronization.

TITANX · DOMAIN MODELING · ZERO-DOWNTIME MIGRATION

### Decoupled Seat-Based Identity Architecture

**Challenge:** Phone lines and outbound routing were tied directly to individual user accounts, causing critical failures during employee offboarding and line transfers.

**Solution:** Re-modeled the identity schema to decouple users from phone lines via an intermediate 'Seat' abstraction with granular role capabilities. Orchestrated zero-downtime database migration and queue-driven provisioning.

**Result:** Enabled automated phone pooling, local presence rotation, and seamless employee offboarding without carrier state corruption.

FRONTSPIN · ELASTICSEARCH 9 · NODE.JS · AMQP

### Greenfield CRM Search Microservice on Elasticsearch 9

**Challenge:** Complex relational SQL joins across contacts, leads, accounts, and tasks caused database degradation under heavy multi-tenant filtering.

**Solution:** Designed and delivered an independent microservice in Node.js, TypeScript, Elasticsearch 9, and RabbitMQ featuring dual-sync modes (bulk hydration + real-time incremental CDC streaming), auto-suggest, prefix search, and cluster backoff signals.

**Result:** Offloaded heavy read traffic from the transactional database, indexing millions of records with fast, predictable query performance under heavy multi-tenant filtering.

TITANX / FRONTSPIN · TRANSACTIONAL OUTBOX · SALESFORCE SYNC

### Transactional Outbox CRM Write-Back Pipeline

**Challenge:** High-volume call logs and sales notes risked database lock contention and payload loss during carrier network drops.

**Solution:** Implemented the Transactional Outbox Pattern with partition-pruned staging tables, client-scoped polling sweeps, and pre-dispatch payload persistence with strict idempotency keys.

**Result:** Guaranteed at least-once delivery with zero duplicate call log creations and complete carrier outage resilience.

## HOW I WORK

**METHODOLOGY**

### Spec-Driven Architecture

I author comprehensive design specifications, domain boundaries, data models, failure modes, and rollback strategies before writing code. I orchestrate autonomous AI coding agents to plan, implement, and test high-coverage systems, maintaining full human accountability for architecture, security, and correctness.

**REALISTIC & QUALITY**

### AI-Augmented Engineering

Every critical service is backed by automated database test suites, contract validation, and strict multi-tenant isolation, achieving high delivery velocity without architectural drift or technical debt.

## CORE STACK & TECHNICAL DOMAINS

**ARCHITECTURE & PATTERNS**
- Distributed Systems
- Transactional Outbox Pattern
- Event-Driven Architecture (AMQP)
- Concurrency Control & State Drift

**DATA INFRASTRUCTURE**
- PostgreSQL
- MongoDB
- Elasticsearch
- Redis

**LANGUAGES & RUNTIMES**
- TypeScript
- NodeJs
- Java
- NestJs

**APIS & EVENT STREAMING**
- RESTful APIs
- Webhooks
- Public APIs & OAuth2
- AMQP / RabbitMQ

## EDUCATION

**UTN (Universidad Tecnológica Nacional)**
Jul 2018 - Format Certification

**FCE Certificate — C1 Advanced**
Format C1 Advanced English Certification verified by Universidad Tecnológica Nacional.
Certificate attained: english-UTN-FCE-C1.pdf

**EF Standard English Test (EF SET)**
Mar 2024 - Verified Score 61/100

**EFSET English Certificate — C1 Advanced**
Full professional English proficiency report verified under CEFR C1 standards.
Certificate attained: certificateEngTitleB4

**UBA - CAECE - ETN3 MST**
Higher Education & Technical Degree

**Computer Science & Systems Studies**
Computer Science & Administrative Systems studies at Universidad de Buenos Aires (UBA) and Universidad CAECE - Programming Technician degree from ETN3 M. S. Thompson.

## CONTACT