Marcos W. Ferreira

Backend Software Engineer | Distributed Systems in Regulated Environments
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PROFESSIONAL SUMMARY

Backend Software Engineer with 4+ years of professional experience architecting, building, and operating distributed systems and high-throughput financial platforms in mission-critical, regulated environments. Deep expertise in enterprise payment systems (Pix, dynamic Pix QR Codes, PayIn/Payout engines, and core banking integrations with Matera), ensuring transactional consistency under concurrency through idempotency, distributed locks, event-driven queues, and retry mechanisms. Demonstrated track record across global enterprises and public institutions (Western Union, GFT Technologies, and the Rio de Janeiro State Court of Justice via Basis), slashing database query latency from 8s to 600ms and operational turnaround times by up to 73%. Specialized in C# (.NET 8+ / ASP.NET Core), Java (Spring Boot), Azure cloud-native architectures, and test automation (TDD, integration, and E2E testing).

TECHNICAL SKILLS

- **Languages:** C# (.NET Core / .NET 8+), Java (11 / 17 / 21), TypeScript, JavaScript, SQL *(Familiar: Go, Rust, Python)*
- **Frameworks & Runtimes:** ASP.NET Core, Spring Boot 3, Node.js, Angular, React, Electron
- **Distributed Systems & Payments:** Pix, Pix QR Code (Dynamic & Static), PayIn/Payout, Core Banking Integration (Matera), Idempotency Patterns, Distributed Locks, Fault Tolerance, Event-Driven Architecture
- **Messaging & Caching:** Azure Service Bus / RabbitMQ, Redis (Distributed Cache)
- **Architecture & Patterns:** Microservices, Domain-Driven Design (DDD), CQRS, Clean / Hexagonal Architecture, SOLID, TDD, Design Patterns
- **Databases:** Oracle, Microsoft SQL Server, PostgreSQL, MongoDB
- **Cloud & DevOps:** Microsoft Azure, Docker, Azure DevOps, Jenkins, CloudBees, SonarQube, Bitbucket, Linux
- **Testing & Quality:** xUnit, JUnit, Jasmine/Karma, Cypress, Selenium, Automated Quality Gates

PROFESSIONAL EXPERIENCE

Basis Tecnologia da Informação S.A. | *Software Engineer II*

April 2025 – Present | Rio de Janeiro, Brazil (Remote)

- Architect and maintain mission-critical enterprise applications for the **Rio de Janeiro State Court of Justice (TJRJ)**, including Justice of the Peace governance and internship program management systems using Angular, C# ASP.NET Core, and Oracle.
- Designed and implemented domain-specific business rule engines translating complex statutory decrees into automated validation workflows, eliminating manual verification overhead and ensuring strict audit compliance.
- Developed high-reliability management and operational reports for the Human Resources division, ensuring regulatory compliance and audit readiness for monthly accountability submissions.
- Established and enforced a multi-tier automated test strategy using **xUnit, Jasmine/Karma, and Cypress**, maintaining **~80% code coverage** and preventing regressions across judicial services.
- Ensured full compliance with strict contractual quality requirements and architectural documentation via continuous static analysis with **SonarQube** and automated CI/CD quality gates.

Western Union | *Software Engineer II*

September 2024 – April 2025 | São Paulo, Brazil

- Engineered and maintained high-throughput C#/.NET backend microservices for core financial rails: **Pix, Pix QR Code, PayIn, and Payout**, including direct core banking integration with **Matera**, handling thousands of daily transactions and peak traffic of **~40 req/s**.
- Enforced strict transactional consistency and zero-loss guarantees under heavy concurrency through **idempotency keys, Redis distributed locks, asynchronous message queues, and exponential backoff retry strategies**.
- Built low-latency RESTful APIs and asynchronous background workers for reliable cross-system synchronization with external third parties, processing thousands of daily events.

- Architected and automated microservice deployment pipelines with **Jenkins and CloudBees**, **reducing production rollback time from ~30 minutes to ~5 minutes** (83% faster recovery).
- Developed cross-platform desktop automation tools using **React and Electron**, **reducing average customer support handling time from ~15 minutes to ~4 minutes** (73% operational improvement).
- Championed CI/CD engineering standards across squads: automated pull request validations, strict peer reviews, and automated release governance.

GFT Technologies | *Backend Developer (L1 / L2 / Trainee)*
March 2022 – August 2024 | Barueri, São Paulo, Brazil

- **Back End Developer L2 – Embedded at Western Union** *(April 2024 – August 2024)*:
  - Developed backend microservices in C# ASP.NET Core for **Pix and Pix QR Code** rails, managing seamless core banking integrations via **Matera**.
  - Engineered concurrency safeguards preventing duplicate processing and race conditions using distributed locks and reliable queue consumers.
- **Backend Developer L1 – Embedded at Western Union** *(May 2023 – April 2024)*:
  - Developed C# ASP.NET Core backend services connecting external partner APIs and relational databases within a strictly regulated financial domain.
  - Implemented high-throughput payment settlement workflows for **PayIn and Payout** handling bursts up to **~40 req/s**.
  - **Optimized mission-critical SQL Server queries, execution plans, and indexes under production load, reducing query latency from ~8 seconds to ~600 ms** (>92% performance improvement).
  - Maintained code quality and reliability through automated unit testing, SonarQube static analysis, and Bitbucket peer code reviews.
  - Earned **3x Microsoft Azure Certifications** (AZ-900, DP-900, SC-900) during this period.
- **Internship Trainee** *(March 2022 – April 2023)*:
  - Contributed to 2 Java 11 microservices for an enterprise insurance platform (quoting and policy issuance), leveraging JPA and the **Specification Pattern** to compose dynamic eligibility queries without code duplication.
  - Created standardized WebAPI boilerplate templates implementing **DDD, SOLID, and Clean Architecture**, adopted as baseline architecture across 3 development squads.
  - Successfully completed a 3-month intensive bootcamp covering TDD, REST APIs, and microservices architecture with a production-grade team capstone project.

EDUCATION

- **FIAP** — *Postgraduate Degree (Specialization) in Software Architecture* | 2026 – 2027
- **Estácio** — *Bachelor of Science (B.S.) in Information Systems* | 2020 – 2024
- **EF English Live** — *Advanced English Immersion Program* | 2022 – 2023

CERTIFICATIONS

- **Microsoft Certified: Azure Fundamentals (AZ-900)** — Microsoft
- **Microsoft Certified: Azure Data Fundamentals (DP-900)** — Microsoft
- **Microsoft Certified: Security, Compliance, and Identity Fundamentals (SC-900)** — Microsoft
- **Cloud Lakehouse Data Management Foundation Series**
- **Claude Code in Action**

LANGUAGES

- **Portuguese:** Native
- **English:** Professional Working Proficiency