

Marcel Scognamiglio

AI Systems Architect | Deterministic AI Engineering | Event-Driven Platforms

Brazil (Open to EU / US relocation) |  marcelx@protonmail.com

Languages: Portuguese – Native | English – Professional

Professional Summary

AI Systems Architect with 8+ years designing event-driven platforms and deterministic AI pipelines. Focused on transforming operational workflows through deterministic AI systems that scale without increasing organizational complexity. Architecture Owner of a production document validation system processing ~1000 documents/day with statistical evaluation harness and regression controls.

Core Expertise

- **Operational Transformation:** Redefining manual workflows into deterministic AI-driven systems
 - **Deterministic AI Systems:** Multi-LLM orchestration, evaluation harness, regression control
 - **Event-Driven Distributed Architecture:** AWS, idempotent consumers, transactional jobs
 - **Organizational Scalability:** Designing systems for horizontal expansion without increasing headcount
 - **Technical Roadmapping & Domain Ownership**
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Technical Skills

Languages & Frameworks

- **TypeScript/JavaScript:** Node.js, NestJS, Next.js, React, TypeScript (Strict Mode)

- **Database & ORM:** PostgreSQL, Prisma (TypedSQL), MongoDB, Supabase, Redis
- **API & Contracts:** ts-rest, Zod, GraphQL, REST (JSON:API), OpenAPI/Swagger
- **Python:** Backend development, AI integration, automation scripts

AI & Automation

- **LLM Orchestration:** RAG, Prompt chaining, Deterministic LLM, GPT, Anthropic, Mistral
- **Document Processing:** OCR (Vision-based), Field Extraction, Rules Engines
- **Automation Tools:** Orkes/Conductor, Novu, n8n, Trigger.dev
- **Evaluation:** AI-based data enrichment, Backtesting and LLM evaluation scripts

Cloud, DevOps & Observability

- **AWS:** EventBridge, SQS, S3, RDS, SSM, Lambda - Event-driven architecture
- **Infrastructure as Code:** Terraform, LocalStack (AWS emulation)
- **Observability:** Datadog (Tracing, Metrics, Monitors)
- **Tooling:** Docker, GitHub Actions, LaunchDarkly (Feature Flags)

Architecture & Practices

- **System Design:** Three-tier architecture, Repository pattern, Domain Objects (DOs)
- **Async Systems:** Background jobs, idempotent consumers, cross-service messaging
- **Quality:** Jest, TDD, strict type safety, 100% logic coverage targets
- **UX & Design:** Figma, Design Systems, Responsive Design, Accessibility

Professional Experience

Staff AI Engineer (IC – Architecture Owner) | Clipboard Health

Oct 2025 – Present · Remote (US)

Architecture Owner for AI-driven document validation platform transforming manual SOP-based healthcare workflows. System processes ~1000 documents/day, achieving 70%+ automated approval rate with ~1% false-positive rate. Reshaped

operational capacity by reducing manual dependency by 66%, enabling the organization to scale document throughput without linear headcount growth.

Organizational & Architectural Impact

- Defined long-term technical direction for AI validation workflows, aligning model performance thresholds with operational risk tolerance.
- Replaced manual review dependency with deterministic multi-LLM orchestration and rule-based fallback layers.
- Structured system for horizontal expansion across new document types without increasing operational headcount.
- Introduced evaluation gates and regression controls to ensure continuous deployment without degrading operational trust.

Engineering Foundations

- Established three-layer domain architecture with strict dependency isolation.
- Implemented idempotent event consumers and transactional background jobs for resilience at scale.
- Designed type-safe contracts ensuring cross-service integrity.

Lead Software Developer | FoodReady

Nov 2024 – Jul 2025 · Remote (US)

Redefined backend execution model from time-based scheduling to event-driven architecture, enabling asynchronous scalability and reducing cross-team coordination overhead.

- Designed AWS-based event architecture (Lambda, EventBridge, SQS).
- Introduced AI-assisted automation agents integrated with workflow engines.
- Defined technical roadmap and architecture principles adopted by engineering team.

Senior Software Developer | FoodReady

Nov 2023 – Nov 2024 · Remote (US)

Fullstack development for compliance and regulatory systems.

- Built scalable data processing workflows.
- Implemented observability improvements and reliability enhancements.

Education

- **Systems Technology** | FIAP | *2021–2023*
 - **BA in Journalism, Philosophy & Technology** | FAPCOM | *2009–2013*
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Certifications

- **Statistical Learning with Python** | StanfordOnline | *Feb 2026*
- **Retrieval Augmented Generation (RAG)** | DeepLearning.AI | *Jan 2026*
- **Full Stack Applications** | FIAP | *Jul 2023*
- **Java Development** | FIAP | *Jul 2023*
- **TypeScript** | Codecademy | *Oct 2023*
- **Official ChatGPT Course** | Codecademy | *May 2023*