Manuel Alfaro

Software Engineer

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SKILLS

Languages	JavaScript (expert), TypeScript (expert), SQL (expert), Python (proficient), Java (proficient)
Frameworks	NestJS, FastAPI
Databases	PostgreSQL, MySQL, SQLite, MongoDB, BigQuery
Technologies/Tools	Docker, Kafka, Spark, Redis, AWS, GCP, Terraform, Git, RAG, MCP
Practices	SOLID Principles, TDD, Code Reviews, Agile, Scrum

EXPERIENCE

CuboPago Jul 2021 – Present

Backend Engineer · La Libertad, El Salvador

- Led the backend architecture of a payment processing platform from the ground up, scaling it to over 2M transactions per year across El Salvador, Guatemala, and Panama with 79% year-over-year growth, by designing the initial system architecture, database schema, and engineering workflows as Head Backend Engineer.
- Eliminated 100% of concurrent transaction overlap errors across distributed terminals by designing and implementing a Redis semaphore-based rotation system, managing up to 4 simultaneous transactions per terminal.
- Reduced endpoint latency by 70–90% by offloading heavy processing to asynchronous background workers and decoupling user notifications via async email delivery.
- Architected a data warehouse pipeline on BigQuery using Airbyte for ingestion (∼2K records/hour) and Terraform-managed Lambda schedulers to produce raw Parquet files, enabling scalable transaction analytics from day one.
- Autonomously identified and resolved recurring reporting interruptions by designing and deploying an internal AI assistant via Model Context Protocol (MCP) with natural language-to-SQL capabilities over BigQuery, enabling management to self-serve operational queries.
- Led API certification processes and cross-border conflict resolution with payment processors across El Salvador, Guatemala, and Panama, delivering reliable payment integrations across multiple markets.
- Collaborated with Operations and Management teams through iterative design sessions to build internal tooling, including deposit-to-transaction reconciliation and automated reporting workflows, reducing manual workload by ∼40% and eliminating 3 recurring manual reports.
- Diagnosed a peak-traffic degradation on the transaction history endpoint by profiling query execution time and call frequency during high-load windows, resolving the issue through query optimization and indexing without requiring an RDS instance upgrade.
- Debugged a persistent terminal overlap issue following the Redis semaphore rollout, identifying an insufficient cooldown window as the root cause and tuning lock TTL to fully eliminate concurrent transaction conflicts.

Applaudo Studios Sep 2019 – Jul 2021

Software Engineer · San Salvador, El Salvador

- Designed and built a candidate screening API that automated applicant filtering via randomized technical assessments using JWT tokens, reducing manual recruiter effort.
- Led backend development of an internal employee visibility platform for ∼200 employees, building skill-based developer ranking endpoints used by management for staffing decisions.
- Contributed to the migration of 5 Node.js/NoSQL microservices on GCP to a NestJS/PostgreSQL monolith, reverse-engineering and documenting service flows to ensure system alignment.
- Implemented a Redis caching layer for third-party property valuation API calls, reducing external requests by ∼70% and lowering infrastructure costs.

EDUCATION

Griffith College Dublin Sep 2025 – Sep 2026

M.Sc. Computer Science — Big Data Management & Analytics

IMMUNE Institute Feb 2024 – Mar 2025

Master, Cloud Computing

Universidad Don Bosco Jan 2014 – Jun 2019

B.Sc. Computer Science — Software Engineering

LANGUAGES

Spanish — Native | **English** — Advanced