Julio Antonio López Nolasco

Staff Software Engineer

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Summary

Staff Software Engineer with 10+ years of experience in backend, distributed and full stack systems. Main author of real-time, event-driven microservices in Rust and .NET running on Kubernetes for a US public-safety platform. Independent consultant who delivers custom systems end to end, from the data model to production and hardware integration. Mentors developers, conducts technical interviews for hiring, and has given university talks and workshops.

Experience

Staff Software Engineer

Definity First | Remote, Mexico | Jan 2022 - Present

Grew from Full Stack Developer to Tech Lead to Staff Software Engineer on a real-time public-safety platform for a US client.

- Architected and wrote, as main author, the Rust backends (Tokio, WebSockets, gRPC) that stream live radio audio from fire stations to responders' mobile apps, delivering Opus audio in 60 ms frames.
- Scaled the audio service horizontally on Kubernetes with rendezvous hashing, gRPC relays between pods and automatic pod discovery, using a Redis write-through cache with an in-memory fallback when Redis is down.
- Created and maintain a .NET 8 API that ingests 911 incidents from computer-aided dispatch (CAD) vendors as JSON, XML and encrypted files, processes them asynchronously through RabbitMQ and can keep original payloads in AWS S3 for audit.
- Designed per-vendor JavaScript mappers that run inside .NET on the Jint engine, so adding a vendor needs no redeploy. The API is multi-tenant across the US and Canada.
- Created and maintain a partner integrations API (.NET 8, CQRS, MongoDB, RabbitMQ) that authenticates webhooks with constant-time HMAC verification and accepts new partners through a generic event model.
- Created and maintain a digital alerts service that locates subscribers with MongoDB geospatial queries, honors alert types, quiet hours and time zones, and notifies them by push, email, SMS and Slack.
- Built a Node.js and TypeScript service (2022 - 2023) that renders supplemental emergency data for dispatchers from a display schema, so a new data source needs no new view.
- Support other teams through Tech Operations: DevOps workflows, microservice optimization, software architecture, monitoring (Prometheus, Grafana) and cloud infrastructure.
- Mentor interns and conduct technical interviews for hiring since 2024.

Independent Software Consultant

Freelance | Remote, Mexico | Jun 2015 - Present

Custom systems for companies in Mexico, built and supported end to end.

- USM Networks: technical consulting, developer mentoring and technical interviews, including intern hiring in 2026.
- Air-conditioning manufacturer: React Native (Expo) rewards app for field technicians with barcode scanning, GPS checks on photos and an offline queue with idempotent retries; Ionic app and .NET GraphQL API for diagnostic codes; parts and bill-of-materials portal in .NET and Angular.
- School system: .NET backend and Angular app on PostgreSQL, with Raspberry Pi kiosks that read RFID cards and open turnstiles over GPIO, plus push, WhatsApp and email notifications.
- Tile manufacturer: costing engine (.NET, GraphQL, Vue) that rebuilds any cost sheet as of a past date, with 785 unit tests.

- Event rental company: ERP built and maintained since 2021 on ASP.NET Core, GraphQL, Angular and SQL Server.
- Food plant, through USM Networks: thermal-camera alerts with live updates over server-sent events (Next.js, PostgreSQL), and a computer-vision proof of concept that counts boxes with YOLO and ByteTrack.
- Crop collection centers: purchasing cost and distribution software on desktop and Android (C#, WinForms, SQL Server).

Software Engineer and Consultant
Emcorsoft | Mexico | Jun 2017 - Dec 2021

- Led a development team building an e-commerce platform for small businesses (ASP.NET Core, Angular, SQL Server, AWS).
- Built a legal requests application for Grupo Aeroportuario del Pacífico (ASP.NET MVC, jQuery, SQL Server, DocuSign, LDAP).
- Developed loan management software (ASP.NET Core, Angular, SQL Server).
- Created a platform and mobile app for booking carpool seats across multiple cities in Mexico (ASP.NET, Angular, Cordova, SQL Server).
- Enhanced a GIS for last-mile operations with GPS data collection and route optimization (Java, Spring, WinForms, SQL Server, AWS).
- Ran technical interviews for hiring.

Skills

Languages: C#, Rust, TypeScript, JavaScript, Python, SQL

Backend: ASP.NET Core, .NET, Node.js, Express, Tokio, REST APIs, gRPC, WebSockets, SignalR, GraphQL, HotChocolate, Entity Framework Core

Architecture: Microservices, distributed systems, event-driven architecture, real-time systems, CQRS, Clean Architecture, multi-tenant systems

Messaging and data: RabbitMQ, Redis, MongoDB, PostgreSQL, SQL Server

Cloud and DevOps: Kubernetes, Helm, Docker, Terraform, CI/CD, Azure DevOps, GitHub Actions, AWS, Azure, GCP, Prometheus, Grafana

Security: OAuth2, OpenID Connect, JWT, IdentityServer, HMAC webhook verification

Frontend and mobile: Angular, React, Next.js, Vue, React Native, Expo, Ionic

Testing: xUnit, Testcontainers, Vitest, Jest, Playwright

Also: Computer vision (YOLO, OpenCV), local LLMs (Ollama), Raspberry Pi, Arduino, AI-assisted development with Claude Code

Education

Bachelor's Degree in Computer Systems Engineering
Instituto Tecnológico Superior de Cajeme (ITESCA) | Aug 2011 - Dec 2015

Certifications

Claude Certified Architect - Foundations (CCAR-F)

Languages

Spanish (Native), English (B2)