Luis Eduardo Carrera Bernal

Technical Lead · TypeScript & SQL · AI-Augmented Engineering

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PROFESSIONAL PROFILE

Technical operations lead with 10+ years in software, 4+ leading teams, from automotive-software implementations to development and leadership. At a B2B SaaS I directed its CRM, WhatsApp automation and 6-VPS production; now I own QA, releases and data migrations, delivering with AI coding agents under verification gates I design. Earlier I led teams of up to 40 at IPN.

TECHNICAL SKILLS

AI-augmented engineering	Claude Code (subagents, hooks, MCP) · LLM integration (Anthropic API) · Agentic workflows (tool calling) · Prompt & context engineering · Verification rules for AI output · Whisper pipelines · ComfyUI (SDXL) · Runpod GPU pods · Ollama · Kokoro · ElevenLabs
Quality & releases	E2E test design · Test matrices & test cases · Release management (QA → production) · Regression & load checks · Playwright · Root cause analysis · Jira (REST API)
Data & migrations	SQL (MySQL, PostgreSQL) · Data migration & ETL · Reconciliation against source · Idempotent scripts with dry-run · Excel/CSV pipelines · Prisma
Leadership & delivery	Technical leadership · System design · Code review · Mentoring · Stakeholder management · Customer onboarding · Agile (sprints, daily stand-ups, weekly reviews) · KPI design
Backend, frontend & platform	TypeScript · Node.js · NestJS · tRPC · REST APIs · Redis · React · Next.js · AngularJS · Docker · GitHub Actions CI/CD · multi-tenant RLS · JWT + 2FA
Payments, e-commerce & compliance	Stripe · SPEI bank transfers · Mexican tax e-invoicing (CFDI 4.0) · WhatsApp integrations · WordPress · Shopify · data-privacy compliance (Mexico's LFPDPPP)

WORK EXPERIENCE

Technical Operations Lead — Architecture, QA, Releases & Data Migrations

2024 – Present

Mecánica MX (rejoined) — B2B SaaS for auto-repair shops · Mexico City

- Designed the architecture and 6-VPS production (TypeScript, Node.js, tRPC, Prisma, MySQL/PostgreSQL, Redis) with per-server observability dashboards and a dedicated enterprise-client environment.
- Directed the build of a CRM (6,000+ contacts, health score, churn risk), a Customer Success system (KYC scoring, 14-day SLAs, 3-level protocol; 300+ active accounts) and WhatsApp automation (Evolution API, 4 scoring strategies) that removed ~60 h/month of manual work; integrated LLMs (Claude, Gemini, OpenAI) for ticket triage and summaries.
- Led research and QA for the CFDI 4.0 e-invoicing integration; led 10+ on-site implementations and 100+ remote deployments.
- Gate every release: test each sprint ticket in QA, approve or return it, and re-validate in production (76 approved, 18 returned, 30 production validations); E2E matrices of 13–45 test cases during the AngularJS → React migration. Found a session token in plain text in server logs; validated a search fix on a ~30,000-customer account (6 searches in < 0.9 s).
- Migrated 8,339 historical orders from 3 branches' Excel exports to production with 0 errors via an auditable ETL pipeline (Excel → JSON → database; dry-run → QA → production, reconciled against source); later 2 more branches.
- Data correctness: loaded a 5,908-part catalog into 24 fleet-client accounts, caught 3 defects in the first purchase load and rebuilt it with supplier deduplication (tax ID (RFC) → name → alias); root-caused a bulk correction counting ~3,400 packages instead of 11,934 (pagination without ORDER BY) and validated ~21,539 labor concepts and ~11,934 packages in production.
- Own L2/L3 escalations, collections and renewals (SQL diagnosis, authorized data fixes): one campaign regularized 11 of 22 overdue accounts. Redesigned CS scorecards into 4 automatic KPIs.

- Mentor new team members and review the support team's work; built N1–N3 playbooks, role-based training and tutorials.

Head of School Records & Supervision Department, Registrar's Office (DAE), IPN

2022 – 2024 · full-time

Instituto Politécnico Nacional, one of Mexico's largest public universities · Mexico City

- Led teams of up to 40 people (developers, QA, support, analysts).
- Led operations of the critical student-information systems (SAES/SICOES): 490+ modules across 52 campuses.

Head of Implementations

2022 – 2023 · project-based, in parallel

Vengala Company · Mexico City

- Led customer implementations end to end: planning, resourcing, process design with clients, user training and pre-delivery testing.
- Built web interfaces (HTML5, CSS3, JavaScript, AngularJS) and WordPress/Shopify e-commerce stores.

Software Developer

2020 – 2022

Mecánica MX — B2B SaaS for auto-repair shops · Mexico City

- Front-end development of the web app in AngularJS: invoice validation, role-based filters, tax and diagnostics fixes, English localization of the UI and cost and sales dashboard charts.

EARLIER EXPERIENCE (2015–2019)

Implementation & Integration Consultant (automotive software), All Software – IT Group (Oct 2015 – Dec 2016): remote installs, SQL Server configuration, IIS servers, client support and training.

Web Developer, PTREE (2018–2019; JavaScript, AngularJS, Firebase, Google APIs; approval-workflow and HR apps).

INDEPENDENT PROJECTS

Product & Software Architect (independent project)

Aug 2026 – Present · maintenance mode

VetNova — multi-tenant B2B SaaS for veterinary clinics · vetnova.mx

- Took a multi-tenant SaaS from zero to production-ready as sole technical owner, with Claude Code as the implementer: I wrote the specs and architecture rules, did code review on every change and owned QA. Pre-revenue; live at vetnova.mx.
- Tenant isolation in PostgreSQL via Row-Level Security rather than application filters (137 tables, 125 tenant-scoped, permission-based RBAC); 722 REST routes (NestJS), 117 Next.js/React screens, Stripe and SPEI bank-transfer payments, Mexican tax e-invoicing (CFDI 4.0) and a WhatsApp appointment assistant.
- Quality gates as infrastructure: 107 end-to-end smoke tests against the real API, 96 hand-written versioned migrations, mandatory 2FA and encrypted backups with tested restore; every decision documented with its trade-offs.

Architecture Lead (side project)

Sep 2026 – Present

REYBER — multi-tenant insurance platform for carriers and insurance agencies

- Defined Phase 1: 25 research and requirements documents, 71 business rules, 36-package build plan.
- Chose the dynamic-attribute data model with a falsifiable benchmark on 10,000,000 synthetic policies under RLS (6× less index: 492 vs 3,030 MB; 1.2 ms vs 118 ms on a two-attribute filter); CI/CD on GitHub Actions with RLS and tenant-isolation tests on every push.

SELECTED AI PROJECTS

JARVIS (local voice assistant: Python, Ollama, faster-whisper, Kokoro; code-enforced risk tiers; LLM-free router, 47/47 tests) · AI video (editing as code, ElevenLabs voice, −14 LUFS) · GPU (ComfyUI (SDXL) pipelines on Runpod GPU pods)

EDUCATION & LANGUAGES

B.S. Computer Information Science, coursework completed — IPN, UPIICSA, 2018–2022 (studied while working) · GPA 8.34/10 · Relevant: Software Engineering, Algorithms (10/10).

Computer Technician — IPN, CECyT 12, 2015 · Spanish (native), English B2 (CEFR) — EF SET 58/100, 2026 · CENLEX IPN, Oct 2023; listening 100/100

Awards & activities: Performance Award — IT Group (2016) · Speaker, 15th Academic Computing Conference — IPN UPIICSA (2018) · Member, School Technical Advisory Council — IPN UPIICSA (2018–2019) · ISO 9001:2015 QMS workshop — Technology Global Certification (2022)