Juan Carlos Castrejon Estrada

Senior Software Engineer | Multi-Agent Systems, Backend and Infrastructure

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PROFESSIONAL SUMMARY

Software engineer with deep database-systems experience and a current focus on AI-driven engineering automation. At Netlab, built **Odoo Launchpad**, a five-role agent system on the Claude Agent SDK, orchestrated as durable Temporal workflows, that carries a plain-language change request through an approved spec, agent implementation, CI and a PR gate to production. Before that, Senior Staff Software Developer at Oracle, holding full responsibility for testing a new SQL feature in the RDBMS through the release sign-off that shipped it, and running the Jenkins release gate for each RDBMS label. Earlier, core contributor at xBacked across the AWS microservices, CI/CD pipeline, monitoring and smart contracts of an overcollateralized lending protocol.

CORE COMPETENCIES

Multi-agent systems and LLM coding agents • Claude Agent SDK, MCP and Temporal • Full-stack TypeScript: React, Node.js, PostgreSQL • Microservices on Docker and AWS ECS • CI/CD, release gating and test automation • Observability: Prometheus, Grafana, tracing, alerts • SQL and Oracle RDBMS • Smart contracts and DeFi

WORK EXPERIENCE

Netlab March 2026 - Present

Lead Engineer *Zapopan, Jalisco, Mexico*

- Built **Odoo Launchpad**, a multi-tenant deployment platform for custom **Odoo ERP** instances whose core feature is agent-driven change management: a plain-language request becomes an LLM-drafted spec, a human approves it, agents implement it on an isolated git worktree, local CI and a PR gate run, and the change promotes to production. Built the full stack in **TypeScript** across a pnpm monorepo: the **React** and **Tailwind CSS** front end used to submit requests and track each run, the backend and API, and per-tenant **PostgreSQL**.
- Designed a **five-role agent system** on the **Claude Agent SDK** (supervisor, spec-drafter, initializer, coder and fixer) with per-role model selection, orchestrated as durable **Temporal** workflows so a run survives worker restarts, with tools exposed to the agents through **MCP** (Model Context Protocol).
- Instrumented the agent sessions: parsed the per-session transcripts, counted tool calls per turn and separated model inference time from tool execution time. **69%** of wall clock was model inference across **414** analysed turns, and none of them issued two tool calls at once, so the optimisation moved to reducing turn count.
- Built the tenant infrastructure: per-client **VPS provisioning via the Hostinger API**, **container-per-tenant** Odoo, **PostgreSQL** and filestore behind **Traefik** with automatic TLS, a **GitHub App** managing branches and pull requests per client repository, AES-256-GCM secret storage and an audit-log write on every effectful action.

Oracle February 2024 - March 2026

Senior Staff Software Developer *Guadalajara, Mexico*

- Held full responsibility for testing **Unbounded Property Graph Queries**, a new **SQL** feature in Oracle **RDBMS**, as the point of contact for the area. Owned the test automation for the feature: designed the test specifications, validated development deliverables against the architecture documents, filed bugs for every discrepancy found, and owned the project sign-off that released it.
- Ran the version sign-off through **Jenkins** continuous delivery pipelines, using the automated regression suites as the release gate for each RDBMS label. Triaged pipeline failures on **Linux** build hosts, separating product regressions from infrastructure faults (host resources, environment drift, flaky agents) so that only verified builds were promoted. Took part in **on-call**, working from **tracing** and **alerts** to diagnose failures.
- Wrote **Java** tests with **Maven** and **JUnit** for PDBCS, raising test coverage up to **90%**.

xBacked September 2021 - June 2023

Core Contributor *Brisbane, Queensland (remote)*

- Contributed to the backend infrastructure for an overcollateralized lending protocol: designed and containerized the **microservices** behind the product with **Docker**, deployed them on **AWS ECS** and configured the surrounding networking (VPC, security groups and load balancing) so the HTTP APIs served production user traffic. The services ran on **Node.js** with **PostgreSQL** (including replication) and **Redis**.
- Built and maintained the **CI/CD** pipeline: automated Docker image builds pushed to **Amazon ECR**, rolling deployments of ECS services and task definitions, and environment configuration for staging and production, so every merge to main reached production without manual intervention.
- Deployed **Prometheus** and **Grafana** for real-time monitoring of the protocol and the services, defining the metrics, dashboards, alerts and tracing that became the team's first stop during incidents.
- Contributed to the development of the **smart contracts** for the protocol, written in Reach so the core financial logic could be deployed blockchain-agnostically across the chains the Web3 product targeted.
- Built the **ReactJS** components of the web application and contributed to algorand-wallet-select, the protocol's multi-provider **Algorand** wallet-connection library. Core contributor to xbacked-sdk, the official TypeScript SDK, and primary contributor to xbacked-collector (github.com/xBacked-DAO).

Facebook June 2020 - September 2020

Production Engineer Intern *Menlo Park, California (remote)*

- Delivered a backend migration in **Hack** (Facebook's PHP dialect) for the Business Integrity Ads team, moving a real-time service that processed metrics across billions of Facebook ads.
- Profiled the service on **Linux** production hosts using the CPU, memory, I/O and network methodology from Systems Performance (Gregg), established the resource and latency baselines the migration was measured against, and defined the performance metrics used to judge production readiness.

Oracle July 2019 - January 2020

Software Engineer Intern *Guadalajara, Mexico*

- Interned on the **RDBMS** team, focused on the data layer.

Quince Rooftop (Rooftop Ventures LLC) March 2017 - January 2019

Server Administrator / Full Stack Developer / Manager *Mexico City, Mexico*

- Administered the restaurant's **Linux** servers and local network: provisioned and hardened the hosts, ran **NGINX** as reverse proxy in front of the internal web services, and deployed changes to the running services without interrupting operation during business hours.
- Built the internal platform on that infrastructure: **REST APIs** and web applications in JavaScript/TS, **ReactJS** and **MongoDB** that brought live sales, customer reviews, inventory, music playback and CCTV into one place, reworked from floor and kitchen staff feedback so it stayed in daily use.

PROJECTS AND VENTURES

breakcheck *Open Source | Author*

A command-line tool that proves a test guards a line of code: it applies one exact-text mutation, requires the suite to go red on real test failures, restores the original bytes from a checksummed snapshot, and requires green again. Reads TAP, go test, pytest and JUnit XML output, survives Ctrl-C and kill -9 through an fsynced journal, and ships cross-platform release binaries.

Go, GitHub Actions

launchpad *Case Study*

Public case study of the Odoo Launchpad work, built almost entirely by Claude agents steered by one developer: **1,638 commits, 228 specs, 1,855 tests**. Classified a **225-defect** log by what actually detected each defect: 53% were found by running the real system and none by a unit test going red.

TypeScript, Claude Agent SDK, Temporal

Mundo Cognitivo *Co-founder*

A consultancy that builds tailor-made AI solutions and runs AI courses for companies in Mexico: agents and automations connected to the client's existing systems, delivered as diagnostic, fixed-price pilot with an agreed metric, then monthly operation.

Sailova *Co-founder*

A booking platform that makes yacht rental easy, built to extend to reservations for any product or service.

EDUCATION

Bachelor's Degree in Computer Science *Universidad Nacional Autónoma de México (UNAM), Facultad de Ciencias* 2021

Mexico City, Mexico

SKILLS

AI Engineering: LLMs, multi-agent systems, coding agents, Claude Agent SDK, MCP, Claude Code, Codex

Backend & Data: Node.js, REST APIs, microservices, Temporal, SQL, Oracle RDBMS, PostgreSQL (including replication), Redis, MongoDB, Drizzle ORM, Odoo (17 / 18 / 19)

Infrastructure & Operations: Docker, Kubernetes, AWS ECS, Amazon ECR, AWS VPC, NGINX, Traefik, Linux administration, performance analysis, on-call, Prometheus, Grafana, tracing and alerting

CI/CD & Testing: GitHub Actions, Jenkins, Maven, JUnit, test automation, release gating

Frontend: ReactJS, NextJS, Tailwind CSS, TypeScript, Auth.js

Web3: smart contracts, Reach, Algorand, DeFi

Programming Languages: TypeScript/JavaScript, Go, Java, Python, C, C++, Hack, PHP, SQL, Bash

Languages: Spanish (native), English (advanced)