

# CRISTOBAL LARA

Full-Stack Software Engineer · TypeScript · Java · Node.js · PostgreSQL · AWS / GCP

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## SUMMARY

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Full-stack software engineer with 2+ years of production experience across **Java/Spring Boot and TypeScript/Node** backends. Shipped a zero-downtime Stripe migration, built Kafka-backed bid queues, cut a GCP database bill by 42%, and led a 4-phase Sentry observability rollout. Comfortable owning architecture end-to-end — built and ship CoraVet (multi-tenant SaaS) as solo engineer. Mechatronics engineering background from ESPOLE plus a research internship at IRIDIA, a top European AI lab.

## SKILLS

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- **Languages:** TypeScript, JavaScript (ES6+), Java 17, Python, HTML5, CSS3 / SCSS
- **Backend:** Spring Boot 3.x, Node.js / Express, NestJS, Flask, REST, WebSocket, Kafka
- **Frontend:** React 19, Next.js, Astro, Redux Toolkit / RTK Query, Tailwind CSS, Bootstrap
- **Databases:** PostgreSQL, MySQL, MongoDB, Prisma, Liquibase, SQLite, Firebase
- **Cloud & DevOps:** AWS (EC2 · S3 · Lambda · SES), Google Cloud (Cloud SQL · NAT), DigitalOcean (Droplets · Spaces), Cloudflare (R2 · Pages · Turnstile), Docker, GitHub Actions CI/CD, systemd
- **AI tooling & engineering:** Claude API, OpenAI API, Gemini API, Claude Code, MCP (Model Context Protocol) servers, agent skills, prompt engineering, context-window management, token-budget optimization, structured outputs
- **Payments & integrations:** Stripe & Stripe Connect, Braintree, EasyPost, Algolia, SendGrid, Twilio, MixPanel, Sentry, Everflow
- **Methods:** Agile / Scrum, REST API design, multi-tenant SaaS architecture, observability, security-first design (OTP, OAuth2, brute-force guarding)
- **Certifications:** Introduction to Agent Skills (Anthropic)

## EXPERIENCE

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### Smart Twigs — SSr Web Developer

Jul 2024 – Present

Remote from Vancouver, BC (US-based consulting startup)

**Stack:** Java 17 / Spring Boot 3.2, Node.js, TypeScript, PostgreSQL, MySQL, Kafka, Stripe, GitHub Actions, DigitalOcean / GCP / Cloudflare R2, Sentry, MixPanel

- **NYMA — fashion-streetwear marketplace + auction platform (flagship):** Authored **172 commits** across a year+ of marketplace evolution on a re-namespaced Bricks and Bids fork (**50+ Java packages re-namespaced**; LEGO entities swapped for fashion taxonomy: Brand, Collab, SubCategory, Size, Label, StyleType). Built the production **CI/CD pipeline** (GitHub Actions -> SCP/SSH to a DigitalOcean droplet -> systemd service); ran the cutover from **Google Cloud App Engine to DigitalOcean**; migrated image hosting to **Cloudflare R2** for edge delivery and cost reduction. Shipped item authentication, **AI-assisted product descriptions**, Algolia search, and a full in-person Pickup fulfillment subsystem with EOD local-time deadlines. Led a **4-phase Sentry observability rollout** across auctions, bidding, payments, shipping, and marketplace; the AWS SES email pipeline grew to **60+ event types**.
- **Bricks and Bids — LEGO auction marketplace (foundation for NYMA):** Authored **180 commits across 14+ months** covering payments, shipping, email, auth, admin, and infra. Migrated payments end-to-end from Braintree to **Stripe + Stripe Connect** in 5 phases (client tokens -> payment methods -> charge/capture -> seller onboarding -> cutover) with **zero customer-visible downtime**; designed a **Kafka request/reply bid queue** behind a feature flag to **prevent race conditions and absorb traffic spikes** while preserving per-auction ordering and atomicity; refactored auth (OTP, Google OAuth2, brute-force rate limiting via Passay); migrated email infra to **AWS SES** and shipping infra to **EasyPost** (USPS Price Discovery OAuth2).
- **JoinRedeemer — Chrome cashback extension + backend:** Integrated **30+ major US retailers** (Amazon, Best Buy, Walmart, Home Depot, Nike, eBay) via **browser-side scraping**: per-retailer selector + URL-regex contracts, DOM parsing of cart/checkout/thank-you pages, SPA detection, 3rd-party cookie handling, and multi-region subdomain logic. Built a **static outbound IP on Google Cloud** (Cloud NAT + Serverless VPC Access Connector) so partner APIs could whitelist us; migrated Everflow attribution from frontend to **server-to-server postbacks** with token-protected endpoints and GCP IP allowlist; **cut Google Cloud SQL fixed cost by 42% (~\$250/month)** via usage-pattern analysis and instance right-sizing. Migrated test runner Jest -> Vitest and built a **Puppeteer end-to-end test pipeline** covering 12+ retailer integration flows with realistic browser navigation.
- **Benev — nonprofit multi-tenant SaaS:** Bootstrapped **GitHub Actions CI/CD** for the backend and **Liquibase MySQL** schema, deploying to DigitalOcean (dev) and Hostinger (prod) in the same workflow; built an end-to-end image-upload pipeline with

**pre-signed URLs + browser-side WebP conversion to DigitalOcean Spaces**; integrated Cloudflare Turnstile captcha and a SendGrid + push notification fan-out subsystem.

- Works in a **distributed 6-person team** with rotating ownership across integration, performance, and cross-cutting features; reliably ships 1–2 retailers or major features per 2-week sprint.

## IRIDIA — Université libre de Bruxelles · Research Intern

Feb 2023 – May 2023

Brussels, Belgium

**Stack:** Raspberry Pi 4, OAK-D depth camera, LIDAR X4, UWB localization (DWM 1001), TeraRanger Multiflex proximity sensors, addressable LED arrays, custom 3D-printed and laser-cut chassis

- Contributed to **Mercator**, IRIDIA's modular swarm-robotics platform, designing the multi-sensor robot chassis and integrating compute (2× Raspberry Pi 4), perception (OAK-D + LIDAR + 8 multiflex proximity sensors), and UWB localization on a Sphero RVR base; authored the lab-internal assembly guide that enabled reproducible builds across the swarm. **Co-authored** the resulting peer-reviewed paper "*Mercator: A modular swarm-dedicated robot platform*" (HardwareX, 2026).

## Carseg S.A. — Software Developer (Hunter ERP project) · Feb 2024 – Jun 2024 · Guayaquil, Ecuador · Oracle NetSuite ERP · JavaScript / SuiteScript

Supported Oracle NetSuite ERP implementation: built internal automation scripts and small JS utilities for an enterprise client's data workflows.

## Escuela Superior Politécnica del Litoral (ESPOL) — Software Developer · Oct 2023 – Dec 2023 · Guayaquil, Ecuador · TypeScript · UI / UX

Redesigned the UI/UX of the faculty platform (1,000+ users) and contributed back-end response-time improvements.

## SELECTED PROJECTS

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### CoraVet — Multi-tenant Veterinary SaaS

Sole engineer · live in production

**Stack:** NestJS 11, Prisma 7, PostgreSQL (Neon), Astro 5, React 19, AWS S3 / SES, Sentry, Firebase Admin, MJML + Handlebars (email), Helmet, Pino structured logging, Cloudflare Pages, DigitalOcean

End-to-end multi-tenant SaaS for Latin American veterinary clinics. First live tenant: [agroveterinaria-coravet.com](https://agroveterinaria-coravet.com) (Ecuador). Owned architecture from scratch — multi-tenancy isolation, DigitalOcean droplet hardening playbooks, JSON-LD SEO, LOPDP (Ecuador GDPR-equivalent) compliance, and Sentry-instrumented observability across the API.

### AeroAnalytics — Air Quality Web App for North America

NASA Space Apps Vancouver 2025 · 1st place (23 teams)

**Stack:** React 19, TypeScript 5, Vite 6, Redux Toolkit + RTK Query, deck.gl 9 (HexagonLayer + GPU aggregation), MapLibre GL 5, ECharts 5, Tailwind CSS 4

Built the React/TypeScript frontend in 48 hours on a 6-person cross-functional team (3 Full Stack, 2 ML, 1 AI). Owned the continent-scale **3D pollution heatmap** (deck.gl HexagonLayer with GPU aggregation, custom zoom-aware radius / elevation interpolation), the deep-linkable per-location dashboard with Redux-driven forecast / historical mode switching, and the RTK Query API layer with streaming CSV ingestion of NASA TEMPO satellite + ground-based air-quality data harmonized across North America.

## EDUCATION

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### Canadian College of Technology and Business (CCTB)

Sep 2024 – Sep 2027

Full-Stack Web Development Diploma (with Co-op) · Vancouver, BC

- **Capstone project:** CoraVet — multi-tenant veterinary SaaS, now live in production (see Selected Projects).
- **Core coursework:** Web Application Programming, Advanced UI Programming, DevOps, Software Analysis & Design, Database Management Systems, Data Communications & Networking, Linux Networking, Server Administration.
- **Extracurricular:** Java Club — SOLID principles, OOP design patterns, applied Java projects.

### Escuela Superior Politécnica del Litoral (ESPOL)

2017 – 2023

Bachelor of Mechatronics Engineering (Ing. electrónica, robótica y mecatrónica) · Guayaquil, Ecuador

- **Thesis & co-author of peer-reviewed paper:** "*An Open-Source 3D Printed Three-Fingered Robotic Gripper for Adaptable and Effective Grasping*" (Biomimetics, MDPI, 2025) — co-authored a multi-institution paper based on the ESPOL thesis project (mechanical linkage, actuation logic, embedded firmware). Contributed conceptualization, methodology, software, validation, and investigation.
- Research intern at **IRIDIA, Brussels** (Feb–May 2023) — see Experience.
- **IEEE Robotics & Automation Society** — Vice President (2021), President (2022).
- **Outstanding Student — Community Service Practices**, ESPOL (2022).
- NASA Space Apps Challenge 2018 — local participant and project collaborator.