

Garri Figueroa

Software Engineer · Fullstack and Cloud Infrastructure

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PROFESSIONAL PROFILE

Software engineer with 15+ years across fullstack development, infrastructure administration and cloud services. A consolidated track record in national and local government projects: built the resource management system for the social registry at the Community Development Department of the Municipality of Quillota, and worked on strategic projects for Chile's National Road Safety Commission, the national police force, the Ministry of Transport and Telecommunications, the Ministry of Health and the Civil Registry.

Today I am a software engineer and founding team member at CaptaLog, a SaaS platform for field inspections and regulatory compliance in Latin American heavy industry. I am comfortable well below the application layer when a problem demands it.

AREAS OF EXPERTISE

- Integrating AI into internal workflows through the Model Context Protocol (MCP).
- Offline-first mobile apps for field work: capture without connectivity and later synchronisation with data reconciliation, applicable to rural or poorly covered areas.
- Digitising inspection and enforcement processes: inspection checklists, field observations, corrective action tracking and an auditable trail.
- Digitised environmental management: carbon footprint and waste management systems, applicable to municipal environmental reporting and recycling compliance.
- Infrastructure and cloud services administration, with sizing and cost control for constrained budgets.
- Integration between public sector platforms and databases, including undocumented legacy environments.
- Modernising bureaucratic procedures: document digitisation, electronic signature and administrative workflow automation.
- Social management and citizen-facing systems: social registry, beneficiary records and information management for neighbourhood communities.

PROFESSIONAL EXPERIENCE

Some of these roles overlapped. Between 2012 and 2017 I combined employment with independent consulting and commissioned projects; between November 2024 and April 2026 I ran two platforms in parallel on the same stack.

Software Engineer · Founding Team Member, CaptaLog

December 2024 – Present

Ruby on Rails 8 · MySQL 8 · Amazon RDS · Amazon EC2 · React Native · Expo · TypeScript · SQLite · MCP

- Founding team member, involved in product, technical and business decisions.
- Designed and built the offline-first mobile app from scratch in React Native on Expo, for iOS and Android. Over a year of continuous development; live on the App Store and Google Play.
- Defined and implemented the synchronisation strategy: fire-and-forget dispatch from the device plus a symmetric reconciliation pass, so field data is captured without connectivity and device/server divergence is resolved without data loss.
- Integrated the mobile app and the web platform through versioned sync contracts: the backend generates and publishes the contract for every payload and the app consumes it as a fixture, so its transformation tests fail when the contract moves. Divergence between the two sides surfaces in CI instead of in the field.
- Designed and implemented the platform's authentication on OpenID Connect with PKCE.
- Fullstack development of the web platform, including the inspection checklist engine with multiple question types and nested structures.

- Established the testing practice across both repositories: separate unit and integration suites on the mobile app, and unit, integration and system tests with measured coverage on the web platform. Linting, formatting and static security analysis run on every commit.
- Designed and built the MCP integration, exposing the platform to AI assistants for task creation, checklist editing and publishing, issue management and document lookup.
- Agent-assisted development as the standard workflow: one isolated worktree per task, agents implementing and reviewing against written repository conventions, and an in-house MCP server giving them access to the platform domain. Technical judgement, review and the decision to merge stay human.
- Production observability instrumentation and failure resolution on field devices, where the error rarely reproduces on a desk; including silent validation errors that caused complete rendering failures in the editor.
- Competitive analysis of the field inspection software market as input for product decisions.

Software Engineer, Valopes

November 2024 – April 2026

Ruby on Rails 8 · MySQL 8 · Amazon RDS · Amazon EC2

- Development and maintenance of a SaaS platform for carbon footprint calculation and waste management.
- Resolved product issues arising from continuous production use: diagnosis, correction and stabilisation on a live system with active users.

Freelance Consultant and Developer, Own and client projects

2023 – 2024

- Custom projects for external clients and own initiatives, covering design, implementation and production rollout.

Lead Fullstack Engineer, AIM Manager

2021 – 2023

Ruby on Rails · Stimulus · Turbo · PostgreSQL · Tailwind · Docker

- Technical leadership on automated operational management solutions.
- Permissions and access system with time-based control and access windows per user and resource.
- Endpoint modernisation, application integration and resource optimisation.
- Handling large data volumes on systems with no prior documentation.

Innovation and Technology Expert, Government of Chile

2018 – 2021

Symfony · .NET · Java · Ruby · MySQL · PostgreSQL · DB2 · CentOS

- Project lead and sole developer of SIEC3, the national police's integrated road accident statistics system: a joint initiative with the Ministries of Transport and Health to record and classify road accidents and produce analysis to guide public prevention policy.
- Picked the project up after years of abandonment, its C# code built on discontinued modules: by reverse engineering the code and data model I carried over requirements, models and use cases, and rewrote the entire application in Symfony 2 over roughly a year and a half, with authentication through Clave Única. The code was delivered to the national police's official repositories.
- Ran and maintained, at CONASET, the driving test system used by municipalities, across every front: direct support to municipalities, systems and database administration, and updates to the question bank.
- Migrations, backups, repairs and security testing on the production system.
- Technical counterpart to the Ministry of Transport datacenters, managed as a service provider, and to the external development and support vendors.
- Operational maintenance and management of strategic projects with the National Road Safety Commission, the national police force, the Ministry of Transport and Telecommunications, the Ministry of Health and the Civil Registry.

Software Engineer, Unisign

2015 – 2018

PHP · Symfony · HTML5 · Bootstrap · MySQL

- ERP-CRM software, web content management and online ordering.
- Built an information management system for neighbourhood communities.

Fullstack Developer, Independent Technology Consultant

2013 – 2017

SQL · VPS

- Applications for companies, startups and public interest institutions, including fire departments and municipalities.

Earlier roles (2007–2015): Municipality of Quillota, Acción S.A., Prosys, Valparaíso Science and Technology Centre (CCTVal, USM), International Institute for Business Innovation (3IE)

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Ruby, PHP, Python, SQL, Java, .NET, HTML, CSS

Frameworks and runtimes: Node.js as the everyday runtime for JavaScript and TypeScript work: build tooling, command line scripts and test suites. On the web, building my own interfaces with React, Next.js and Astro. Ruby on Rails · Symphony · CodeIgniter · Hotwire · Stimulus · Turbo · Tailwind · Bootstrap · jQuery

Mobile: React Native on Expo, for iOS and Android. Offline-first architecture, fire-and-forget sync and symmetric data reconciliation. Shipping and maintaining on the App Store and Google Play. Expo Router · TypeScript · Zustand · Drizzle ORM · SQLite · NativeWind

Databases: MySQL (including 8 on Amazon RDS), PostgreSQL, DB2. Relational design and advanced queries. SQLite

Infrastructure and DevOps: AWS EC2, AWS RDS, S3, CloudFront, CloudFormation, Linux (Ubuntu, CentOS), Docker, Kamal, Git, VPS, cloud security

Architecture and integration: REST API design and integration. HTTP at specification level: method semantics, PATCH and cache behaviour. OAuth2 · OpenID Connect · PKCE · Clave Única · webhooks · sincronización offline · ingesta IoT

Quality: Jest with separate unit and integration suites, Testing Library, Minitest and Capybara for system tests, coverage measured with SimpleCov. Static security analysis with Brakeman and eslint-plugin-security; RuboCop, ESLint and Prettier on every commit. Production observability with Sentry.

Applied AI: Two fronts. Building for AI: in-house MCP servers exposing a platform to assistants, with its domain model and its permissions. And building with it: Claude Code and opencode as a model-agnostic harness, local models through Ollama when the code cannot leave the machine, and an agentic workflow with one worktree per task and human review before merging. modelos locales · LLM tooling

Digital documents: Electronic signature and its legal validity under ESIGN/UETA and Latin American equivalents; evaluation of open source document signing solutions. firma electrónica · PDF · verificación por QR

Other capabilities: Reverse engineering and reconstruction of undocumented software, Requirements gathering, Public digital services with the gob.cl Digital Kit and accessibility criteria, Scheduling and appointment allocation: queues, service flows and time windows, Containerising applications and services, Automation in Python: command line tools, incremental synchronisation against external APIs and data analysis over SQLite.

OPEN SOURCE

- [uunicorn/python-validity#256](#) — Synaptics fingerprint sensors on Linux. Brought up a factory-empty 06cb:00b7 (0xd51 silicon) from zero flash partitions to working enrollment, then contributed the result as a positive control for a reset_blob failure that had another contributor stuck for months, plus a fix for a startup bug that permanently bricks the driver if a firmware upload is interrupted.
- [libfprint!626](#) — Hardware-validated the native Validity/Synaptics driver on silicon its author had no access to, and reported two blockers found in the process, including one affecting devices he had already validated.

EDUCATION

Computer Engineering — Coursework completed

- Teaching assistant and tutor in the Physics and Computer Science departments.
- Contributor to the student federation and student councils; recognised for several consecutive years in extracurricular activities.

Leadership and communication

- Planning lead on a resource management project for a municipal community development department.
- Talks and presentations at innovation and entrepreneurship fairs and conferences.
- Coordinated workshops and youth activities; delivered welcome talks.