Cristhian Andrés Barros

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Systems Engineer with 12+ years building mission-critical web systems and APIs for healthcare and ERP. I'm a specialist in PHP 5.x/7.x/8.x / Laravel 10, MySQL, and large-scale data processing (CSV > 1M rows), with a strong focus on performance, maintainability (SOLID), and automation (cron/queues). I have led end-to-end cycles—from analysis to deployment—achieving 40%–90% performance gains and significant memory-use reductions. I work effectively both independently and in cross-functional teams.

Technical Skills

- **Backend:** PHP (5.x, 7.x, 8.x) | Laravel | API REST | MVC | SOLID | Queues/Cron | Docker, CI/CD (Github Actions)
- **Frontend:** Vue 2/Vuetify | HTML/CSS/JS | Bootstrap | Blade
- **Data:** MySQL | PostgreSQL | Data modeling and query tuning
- **Practices:** Git | Code review | basic testing | performance refactors
- **Ways of working:** Jira | SCRUM | Redmine
- **Cloud:** AWS (foundational)

Professional Experience

Cidenet S.A   **Medellín,Colombia**
Development Analyst   *Nov 2020 – Present*

Featured projects

Clinical Patient Management Dashboard - Toyota Portal
Web system that streamlines post-service billing by validating patient demographics, digitizing documents, and assembling claim files for submission to healthcare providers.

Achievements
- Designed and implemented PHP/Laravel APIs and applications in a collaborative SCRUM environment with JIRA traceability.
- Optimized the Toyota Portal achieving **−40% latency** via indexing, pagination, and query refactoring against an external **HIS** (MySQL).
- Reduced **cron job duration by −90%** for billing flat-file processing and SAP charges (CSV > 1M rows) using parallel processing and file streaming to eliminate bottlenecks.
- Implemented large Excel report generation with low memory usage, plus additional automations (cron jobs).
- Proposed and implemented backend/frontend performance improvements in the **Flutter (Android)** app.

Challenges
- Delivered new features and resolved high-priority incidents, aligning solutions with business needs and maintainable code.
- Deepened expertise in **PHP 8 / Laravel 10** to improve technical analysis and delivery quality.

Tech stack: PHP 8.2 | Laravel 10 | MySQL | Flutter | Vue 2/ Vuetify | HTML/JS/CSS | Jira | Scrum

Web System for Electronic Medical Record (EMR) Forms

Web system for managing electronic medical record forms. Users can consult patient histories, list historical EMR form records, and generate PDFs based on dynamically parameterized forms wich are later uploaded into a document management workflow.

Achievements

- Defined an MVC architecture from scratch using OOP and SOLID; analyzed the legacy version and performed a comprehensive update of structure and logic.

Challenges

- Used **Cursor** (AI-powered IDE) to accelerate analysis, focus on business logic, and meet the schedule.

Tech stack: PHP 7.x | MySQL | HTML/JS/CSS

Ingeniería Especializada S.A   **Medellín, Colombia**
Software Developer   *Nov 2012 – Nov 2020*

Featured Projects

Email API | Web System

Web system plus REST API to centralize email sending for the Sigmas ERP. Features include viewing sent emails, checking statuses (Sent/In Queue), previewing email content, and downloading attachments.

Achievements

- Built the Email API and base Web system with Laravel, Blade/Bootstrap 5, and queues for asynchronous sending; stored attachments and tracking metadata in **PostgreSQL (JSONB)** to monitor statuses (Sent/In Queue).
- Defined a NoSQL-style database structure using PostgreSQL's **JSONB** data type.

Challenges

- First project with Laravel: adopted framework standards and improved development productivity.

Tech stack: PHP 7.x | Laravel 5 | PostgreSQL | Blade | HTML/JS/CSS | Scrum

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Sigmas ERP Web System

Energy project management system based on the **Balanced Scorecard**. Includes modules for employees, time tracking, commercial, and financial processes, among others.

Achievements

- Delivered features across **employees/time/commercial/financial** modules, plus a training module to manage events, sessions, and attendance.
- Worked directly with end users to gather requirements and prioritize changes.

Challenges

- Strengthened two-way communication with users, proposed improvements, and adapted to frequent requirement changes.

Tech stack: PHP 7.x | Laravel 5 | MySQL/PostgreSQL | HTML/JS/CSS | Scrum

Portfolio - Github Pages - https://cristhianbarros.github.io/

Static website to showcase my professional profile and provide resume download. Lists repositories for projects I've been working on recently.

Achievements
- Implemented **CI/CD with GitHub Actions** to automatically deploy to **GitHub Pages** on push to the main branch.
- Centralized my professional profile and resume download in a responsive static site.

Challenges
- Configured the **YAML workflow** with a protected branch, caching, and a reproducible build.
- Optimized bundle size (minification and caching) **without breaking Tailwind's purge**.

Tech stack: HTML/JS/CSS | Tailwindcss | GitHub Actions

Product Catalog - REST API - https://github.com/cristhianbarros/api-catalog

REST API to list products, add them to a shopping cart, and create orders with the selected items. Uses **Docker** to orchestrate services: application server (Laravel), proxy (Nginx), cache (Redis), database (MySQL), and email (MailHog).

Achievements
- Designed REST endpoints to list products, manage the cart, and generate orders.
- Orchestrated a **Docker Compose** environment with services for Laravel (app), Nginx (proxy), Redis (cache/queues), MySQL (DB), and MailHog (email).
- Achieved **>80% test coverage** with **Pest PHP**; added **static analysis** with **PHPStan**; formatting with **Pint** and automated refactors with **Rector**.
- Implemented queues and events for asynchronous processing and email sending.

Challenges
- Designed ACID transactions with idempotency for order creation to avoid duplicates on queue retries.
- Implemented concurrency handling (cart/stock) and consistency between Redis and MySQL.

Tech stack: HTML/JS/CSS | Docker (Compose) | PHP/PestPHP/PHPStan/Queue/Events/Mail | Redis | MySQL

Education

INSTITUCIÓN UNIVERSITARIA SALAZAR Y HERRERA - IUSH **Medellín, Colombia**
B.S in Systems Engineering *Nov 2016*

CORPORACIÓN UNIVERSITARIA ADVENTISTA - UNAC **Medellín, Colombia**
A.S in Systems Technology *Nov 2010*

Languages

Spanish: Native
English: B1

Certifications

Cloud Architecture **Medellín, Colombia**
Talento Tech - Min TIC *Ago 2025*

PHP With Laravel *Oct 2024*
Platzi

Introduction to Frameworks with PHP *Jul 2024*
Platzi

Javascript Total *Ago 2023*
Udemy

GitHub for Programmers *Feb 2023*
Linkedin Learning