Sergio Roa Full Stack Developer

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Profile

Full-Stack Developer with over 5 years of experience, specialized in delivering robust and scalable systems. My main strength lies in backend development with **PHP (Laravel)** and **Java (Spring Boot)**, complemented by solid frontend experience with **Angular** and **React**.

I combine the discipline of corporate environments with a comprehensive product-oriented vision that enables me to:

- Lead and mentor technical teams through code reviews, task planning, and technical support.
- Align technology with business goals by translating stakeholder requirements into solutions that create commercial value.
- Optimize performance by leveraging my background in **Embedded Systems (C/C++)** to design efficient APIs and low-level code.

Projects

Plataforma IoT de Monitoreo Agrícola – Vit Sensors

06/2022 – Present

IoT Platform Technical Lead

Led the technical development of an **IoT platform for the digitalization of agricultural processes**. Responsible for system architecture, backend implementation, cloud infrastructure management, and the overall product evolution.

Technical Achievements:

- **Latency Optimization:** Reduced sensor data write time by **85%** (from 3 seconds to ~350 ms), ensuring backend stability under load.
- **Data Architecture Implementation:** Executed and expanded the database migration from a **NoSQL (DynamoDB)** schema to an optimized **relational model on AWS RDS**. Designed most of the tables and associated backend logic, significantly improving query integrity and performance.

Professional Experience

Full-Stack Developer - HR Management Systems

Synergo Comunicación Alternativa (Grupo Redes Humanas) 🔗

10/2020 – 09/2025

Led the development and maintenance of critical systems for talent management, serving as the team's technical reference. Responsibilities covered the entire software lifecycle—from gathering requirements with end users to functional validation, deployment, and continuous optimization.

Key Achievements and Responsibilities:

- **Candidate Self-Service Portal:** Reduced manual management time by **20%**.
- **Query Optimization in Laravel:** Decreased response times from **15s to 2–3s** and reduced data payloads from **20 MB to 1.2 MB**.
- **System Integrations:** Automated communication between external portals and internal systems, cutting HR operational workload by **30%**.
- **Development of Core Modules:** Implemented key features for medical leave, health exams, equipment inventory, attendance tracking, and multichannel notifications (email and WhatsApp).
- **Hybrid Migration to Google Cloud Storage (1 TB):** Achieved **15–20% cost savings** through resource optimization.
- **Frontend Modernization (Angular v2 → v19):** Restructured critical modules and upgraded the codebase to a modern architecture.
- **Backend Migration (Lumen/Laravel 5.4 → Laravel 11):** Conducted compatibility validation with the updated frontend.

Tech Stack: Laravel, Angular (2–19), MySQL, PostgreSQL, FastAPI, Docker, Google Cloud Platform.

Electronic Product Developer

Vit Sensors

07/2018 – 10/2020 | Bogota

Designed and developed firmware and hardware prototypes for data monitoring and acquisition solutions in low-resource environments. This experience provided a solid foundation in code optimization and efficient memory and processing management.

- **Infrastructure Management:** Administered the **AWS infrastructure** (Elastic Beanstalk, Amplify, RDS), achieving a **15% reduction in monthly costs** through resource optimization.
- **Frontend Modernization:** Upgraded the visualization platform to **React 19**, ensuring maintainability and compatibility with modern web standards.

Tech Stack: Spring Boot, React, AWS (Elastic Beanstalk, RDS, Amplify, Route 53), DynamoDB.

Education

Electronic engineering
Sergio Arboleda University
02/2013 – 10/2018 | Bogota D.C.

Academic Honors and Achievements

Graduation with Honors
2018

Recognized for outstanding academic performance (GPA 4.2/5.0) in Electronic Engineering, Sergio Arboleda University.

Meritorious Thesis Project
2018

Awarded the highest grade (5.0/5.0) for the development of a software/hardware system for microcontrollers.

Academic Excellence Scholarship

Recipient of an academic scholarship maintained throughout the degree.

Top National Results – Saber Pro (ICFES) Exams
2017

Recognized for achieving one of the highest scores nationwide in Colombia's higher education quality assessment exam

Key Responsibilities:
- Developed low-level firmware in **C/C++** for microcontrollers (**STM32, PIC, Arduino**).
- Designed **bare-metal solutions** focused on efficiency and direct hardware control.
- Prototyped and validated embedded systems for commercial applications.

Tech Stack: C, C++, Microcontrollers (STM32, Arduino, PIC).

Junior Researcher
Sergio Arboleda University
02/2017 – 08/2017

Participation in applied research projects in electronic engineering, focusing on motor control systems, prototype development with sensors and firmware, and PCB design.

Skills

Languages
PHP, JavaScript, TypeScript, Java, Python, SQL, C/C++

Backend and Architecture
Laravel, Spring Boot, FastAPI, Lumen, RESTful API Design, Hexagonal Architecture.

Frontend
Angular (experience migrating from v2 to v19), React (v19)

Databases
MySQL, PostgreSQL (Relational); Experience in schema design and query optimization.

Cloud and Infrastructure
AWS (Elastic Beanstalk, RDS, Amplify), Google Cloud Platform (Compute Engine), Docker.

Tools and Methodologies
Git, Code Reviews, Requirements Gathering, API Integration.

Languages

Spanish

English
B1, IELTS