

Sergio Sebastiani
Engineering Maintenance Specialist at
Alstom

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Summary

With a strong foundation in physics and extensive experience in software development, I design and maintain robust and scalable web applications, integrating skills in DevOps, data management, and IT infrastructure. I work across both frontend and backend with a strong focus on performance, security, and innovation.

Approach to Software Design and Development

My workflow is based on creating maintainable, modular, and scalable software solutions, with clean, well-documented code that follows industry best practices. I believe in a structured and precise development approach, where each component is designed to be reusable, easily integrable, and built for long-term sustainability. I systematically use Dockerized environments in both development and production to ensure portability, isolation, and consistency. Source code management is always handled through version control systems, primarily Git, with well-defined workflows including strategic branching, merge management, and change traceability. I have experience in designing and implementing CI/CD pipelines (Continuous Integration / Continuous Deployment), which automate software delivery and ensure fast, secure, and reliable releases. Every phase of the project lifecycle - from concept to deployment - is handled with strong attention to quality, documentation, and system evolution. I have over a decade of experience in backend development, particularly using Python and PHP, with frameworks such as Flask, Django, and Laravel. I also have strong expertise in WordPress as a Content Management System, including webmaster-level skills for managing dynamic websites. On the frontend, I have in-depth knowledge of vanilla JavaScript and the Angular framework, with which I build modern, responsive, and performance-optimized interfaces.

DevOps & Infrastructure Skills

Alongside software development, I have solid experience in managing IT infrastructure, with a focus on configuring secure, scalable, and high-performance environments. I can manage networks, servers, access control, and backups, and ensure reliable communication between systems, even in complex scenarios. I

work regularly with containerized environments, port management, secured tunnels (e.g., Cloudflare), and adopt effective cybersecurity strategies for environments requiring high standards of protection and operational continuity.

I focus on the design and development of advanced enterprise portals that streamline internal and external business processes and offer customized interfaces for clients. My work also includes the implementation of intelligent systems that generate automatic alerts to support both corrective and predictive maintenance, by applying a combination of classical statistical methods and Machine Learning techniques to enhance decision-making and optimize operations. These alerts are managed from a centralized control room and specifically support the maintenance of railway signaling systems.

Main Work Focus

Work Experience

Engineering Maintenance Specialist*(September 2019 - Present at Alstom)*

- Software Developer (80%): Improving stability and developing new functionalities of the maintenance control room.
- Service Operations (20%): Analyze data, coordinate operations, and prepare maintenance documentation. Troubleshoot critical issues..

After Sales Engineer *(November 2015 - September 2019 at Alstom)*

- Performe data analysis to evaluate the performance of railway signaling systems, prepare comprehensive reports detailing key metrics and insights and assessed the fulfillment of contractual requirements through in-depth performance analysis.
- Monitored system failures and performed (RAMS) analyses, collaborated on identifying root causes of failures and on implementing corrective measures to enhance system reliability.
- Troubleshooting main issues providing technical solutions and/or best mitigating strategies (by taking advantage of my experience and/or properly engaging qualified engineers).
- Coordinate after sales activities, assuring on-time material delivery and maintenance operations execution.

Training and Maintenance Documentation Manager*(June 2013 - November 2015 at GE Transportation)*

- During this period I worked in a big multicultural project for Sweden Railways (SL) consisting of a complete signaling system including; track area equipment, the interlocking, the centralized control system and the cab signaling system. I was Responsible for the maintenance documentation preparation and training execution of all the sub-systems involved.

Field Service Engineer*(November 2005 - June 2013 at GE Transportation)*

- Supported engineering during development of new signaling systems: on-site

measurements, test rides, data analysis.

- Writing of test&commissioning procedures and coordinated test&commissioning activities.
- Performed and coordinated system monitoring, RAM analysis, identifying failure modes and finding technical solutions.
- Prepared and performed training's.

Fellow (*February 2003 - November 2005 at IFAC-CNR Institute of Applied Physics*)

Scientific Researcher - Applied Optics

- <http://proxy.osapublishing.org/oe/fulltext.cfm?uri=oe-13-5-1696&id=82925>

Education - Master degree in Physics

(September 1996 - February 2003 at Florence University of Physics)

Key Skills

Data Analysis

Service Operations

Trainings

Web Applications

Preventive maintenance

Innovation

Troubleshooting

Management

DevOps

Programming

Railway Signaling

Troubleshooting

Data Science

Full Stack Developer

Microservices

Programming Skills

HTML (Expert)

PHP (Expert)

Laravel (Advanced)

Javascript (Expert)

MySQL (Expert)

Postgres (Expert)

Python (Expert)

Node.js (Basic)

Django (Expert)

Angular (Expert)

NIFI (Basic)

Android(Basic)

JAVA (Basic)

C# (Expert)

VB (Basic)

Docker (Expert)

Kubernetes (Advanced)

Git(Expert)

Visual Studio(Advanced)

Visual Studio

Code(Expert)

WordPress (Expert)

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(Autorizzo il trattamento dei miei dati personali ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali")