Santiago Serrano Marco

+34 600 248 674 • santiagooogle@hotmail.com • Born on July 25, 1999

Profile

An Software and Data Engineer with expeirence in developing system services, optimizing ETL pipelines and researching and ideating AI projects and new technologies. Proficient in Python and Rust, with strong problem-solving skills and a passion for innovative solutions.

Professional Experience

We Humans **Madrid**
Software Engineer/Data Science *July 2024–November 2024*

- Lead a Data analysis project to create and improve ML models for customer ranking.
- Lead a re-design of the backend architectures to improve performance, scalability and flexibility:
  - Using FastAPI, SQLAlchemy, and PostgreSQL.
  - Using AWS ECS, S3, and Fargate.
- Lead a Deep Learning research projects:
  - Transcrive system for sign language to text.
  - Visemes (facial/mouth posing) generation from audio.

Nertus Servicios y Mantenimiento S.A **Madrid**
Software Engineer *January 2023–May 2024*

- Developed and maintained the backend of a 3D point cloud visualization web application using Python, PostgreSQL, FastAPI, and Azure.
- Studied and implemented quality metrics for analyzing LiDAR scanned point clouds using matplotlib, numpy, and scipy.
- Conducted pre and post-processing of point clouds to enhance quality and perform conversions using Azure Virtual Machines and Azure DataLakes.
- Planned and developed ETL processes for field report generation and PDF creation, filtering, grouping, and extracting data dynamically using:
  - Azure Cosmos
  - Azure Functions
  - OracleDB
- Conducted research and development on AI projects, including:
  - Using NeRFs as substitutes for LiDAR.
  - Object detection on roadways through computer vision analysis of point clouds using Rust and Torch/PyTorch.
- Developed APIs for data interaction and integration with desktop software like QGIS and MicroStation.
- Implemented GitLab Actions (CI/CD) for code quality review, static code analysis, auto document generation and auto deployment systems.

Nubecento **Madrid**
Software Engineer *June 2021–December 2022*

- Optimized ETL processes, decreasing data processing time by 25%.
- Developed scalable solutions for complex service features, enhancing system performance and reliability.
- Provided technical leadership, ensuring scalability and efficiency in solutions.
- Internal Tooling Development:
  - Proposed and developed an application to simplify, improve, and validate Salesforce deployment and backup processes.
  - Designed a tool to facilitate text translation into different languages for international clients, using NLP Seq2Seq models.
- Optimized processes with critical execution times, addressing low latency needs and high data volumes.
- Planned software architectures and designed solutions.

Innotec Systems **Madrid**
Junior Developer *March 2019–June 2019*

- Fixing and maintaining legazy code.
- Working on the backend of a Spring Boot application.
- Providing solutions for domain-specific problems.

Key Achievements

Some of the most valuable accomplishments I have brought to my roles include:

- Planning and Desing a general purpose ETL pipeline, centralizing code and reducing complexity.
- Optimized the generation of financial information tables, reducing processing time from 5 minutes to 30 seconds.
- Improved 3D web viewer load times from 3 minutes to 10 seconds.
- Enhanced 3D web viewer performance in large projects from 10fps to over 60fps.
- Reduced runtime for automation pipelines from 30 minutes to 2 minutes.
- Developed predictive models for customer ranking doubling the number of sales and worthy calls.

These achievements were made possible through:

- Loop optimization and low-level system knowledge.
- Analysis of algorithm complexity (Big-O) in memory and CPU.
- Use of lazy evaluation for efficient asynchronous processes.
- Multiprocessing management.
- Data analysis, stadistics and machine learning.

Education

2024–2025: Master on Data Science and Deep Learning. *MIOTI, Madrid*
2018–2021: Computer Engineering (on hold). *Rey Juan Carlos University, Madrid*
2017–2019: Higher Technician in Multiplatform Application Development. *Santa Ana y San Rafael School, Madrid*

Additional Courses

2019: Anti-Hacking Programming Course in Java and .NET

Languages

English: Fluent (B2-C1)
Spanish: Native

Soft Skills

Problem-solving, adaptability, team collaboration, effective communication, creativity, initiative

Extracurricular Activities

Fitness: Regularly go to the gym 3-5 times a week
Scouting: Former Scout for 10 years
Hobbies: Enjoy scientific divulgation, programming, video games, and learning new things

Technical Skills

- **Programming Languages:**
  - Python:

    Libraries and Frameworks:
    - Jupyter Notebooks
    - FastAPI
    - SQLAlchemy
    - Pandas
    - Numpy
    - Matplotlib
    - Pytorch
    - Scikit-learn
    - Scipy

    Advanced Concepts:
    - Dataclass
    - Protocols
    - Generators
    - Decorators
    - Dunder Methods
    - Types and Generics
  - Rust:

    Advanced Concepts:
    - Borrowing
    - Lifetimes
    - Traits
    - Macros
    - Zero-cost abstractions
    - Generics and Bounds
  - C/C++
  - Java
  - JavaScript/TypeScript
- **Platforms and Tools:**
  - Azure
  - SQL
  - NoSQL
  - APIs
  - Git
  - CI/CD (Github/Gitlab Actions)
- **Concepts and Technologies:**
  - Design Patterns (MVC, Singleton, Factory, etc.)
  - Programming Paradigms (OOP, Functional)
  - Threads/Processes/Async (Parallelism)
  - Algorithm Analysis and Algorithmic Complexity
  - Data Structures