Emilio Rodrigo Carreira Villalta

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I am a **software engineer** with a strong focus on **Artificial Intelligence** and advanced computational methods. My experience includes developing tools for statistical analysis, implement **AI** and **Generative AI** solutions across internal enterprise tools and services to streamline workflows, and applying deep learning techniques on **computer vision** to real-world problems. I aim to combine technical expertise with innovative approaches to create impactful solutions.

EDUCATION

Bachelor's Degree in Software Engineering   2021 - 2025
University of Málaga, Spain

EXPERIENCE

Jr. AI Software Engineer   June 2025 – Ongoing
Tupl Inc.
- Implement **AI** and **Generative AI** solutions across internal TuplOS tools and enterprise services to streamline workflows. Integrate **large language models (LLMs)**, **retrieval-augmented generation (RAG)**, **AI agents** and automation into core business platforms.
- Build custom **AI pipelines**, embedding models into internal **APIs** and **UIs**, and collaborating closely with cross-functional teams to identify high-impact use cases.

GenAI Intern   March 2025 – June 2025
Tupl Inc.
- Designed and implemented a **GenAI**-based assistant to integrate automated monitoring and alerting functionalities into solutions built with the TuplOS platform.
- Analyzed functional and technical requirements to ensure seamless integration and configuring **generative AI models** to enable real-time event detection and proactive notifications.
- Conducted functionality and usability testing, making optimizations based on feedback.
- Created technical documentation, user manuals, and tutorials to facilitate adoption and effective use of the **assistant**.

Artifical Intelligence Researcher   March 2025 – June 2025
Scenic Investigation Group (University of Málaga)
- Developed business process optimization using **machine learning (ML)** and **Graph Neural Networks (GNNs)**.
- Worked with Business Process Model and Notation **(BPMN)** tools such as Activiti, Bonita BPM, and Camunda.
- Applied my knowledge of **artificial intelligence**, focusing on **machine learning** and **GNNs**, while also utilizing **genetic algorithms**, **neural networks**, and optimization techniques.

Artifical Intelligence Researcher   September 2024 – March 2025
Khaos Investigation Group (University of Málaga)
- Developed and published a **Python** library for non-parametric statistical tests, enabling advanced statistical analysis and visualization.
- Conducted research on **automatic code generation** using Large Language Models (LLMs), integrating **LangChain** with frameworks such as jMetal and jMetalPy for multi-objective optimization.
- Collaborated with a research group to explore cutting-edge **AI** applications in optimization and statistical methods.

PROJECTS

Bachelor's Thesis   September 2024 – Ongoing
Scientific Article to be Published
- Developed the NND software tool for **MRI scan segmentation** to identify sclerosis using advanced **computer vision** and **deep learning** techniques.
- **Trained** different **models** of **yolo11** and **nnUNet** for **segmentation** tasks **neural network** with a consensus mechanism to enhance detection accuracy through multi-rotation and multi-cut evaluations of 3D images.
- Developed a deep statistical analysis between the different **models trained** using the SAES Python library that I built.
- Leveraged Málaga's **Supercomputer (Picasso Supercomputer)** for **training** and conducting experimental computations.

SAES Python Library   November 2024 – January 2025
Developed during my AI Research Role
- Designed and implemented SAES Python library for analyzing and benchmarking stochastic algorithms, featuring automated LaTeX report generation and advanced statistical analysis tools.
- Developed functionality for processing experimental data, performing Friedman tests, post hoc analysis, and visualizing algorithm comparisons through boxplot graphs.

CERTIFICATIONS

Oracle AI Vector Search Certified Professional   May 2025
Oracle

Efficient Large Language Model (LLM) Customization   August 2024
Nvidia DLI

Oracle Cloud Infrastructure 2024 Generative AI Certified Professional   July 2024
Oracle

Rapid Application Development with Large Language Models (LLMs)   July 2024
Nvidia DLI

Building Transformer-Based Natural Language Processing Applications   March 2024
Nvidia DLI

C2 Cambridge English – Certificate   December 2023
Cambridge University Press and Assessment English

ADDITIONAL INFORMATION

- **Skills:** Computer Vision, Transformer Architecture, Deep Learning, Natural Language Processing, Graph Neural Networks, GenAI
- **Technologies:** Python, **Pytorch**, Tensorflow, **Kubernetes**, **Docker**, **Langgraph**, **Langchain**, **OpenAI**, YOLO, SQL, NextJS
- **Foreign Languages:** English (proficient), Spanish (native)
- **Links:** Portfolio, Github, LinkedIn