

# Fernando Bellido Pazos

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## WORK EXPERIENCE

### IDOM | Consulting, Engineering, Architecture

Consultant & System Innovator

Bilbao, Spain  
Sept. 2023 – Today

#### Description:

##### 1. System Innovator:

- Directed the theoretical research & development of an innovative internal **Retrieval Augmented Generation (RAG)** system, significantly enhancing language understanding capabilities and applications within the organization. Spearheaded the creation of an AI-driven companion, demonstrating leadership in leveraging advanced AI technologies & Large Language Models (LLM) to drive organizational progress and innovation.
- Pioneered the development of an **AI classifier using NLP and the Google's BERT** language model, complemented by an ontology-based approach, for sophisticated categorization derived from comprehensive project descriptions.
- Innovated a **CV generator** grounded in the S&P's Success Factors internal system, featuring a multi-layered approach encompassing data ingestion, AI-driven & deterministic data processing paragraph generation, template compilation, and polished CV output.
- Architected and deployed a cutting-edge AI development infrastructure, encapsulating a fully **dockerized** framework that enables real-time monitoring of system resources. Masterfully set-up **Traefik** for efficient routing, and implemented a suite of advanced AI tools, setting new benchmarks in technological excellence like **Stable Diffusion**.

##### 2. Consulting – Digital Transformation:

- Spearheaded the development of cutting-edge **artificial intelligence and mathematical models**, revolutionizing asset maintenance from reactive to proactive using S&P's Intelligent Asset Management and Internet of Things modules.
- Played a pivotal role as a Statistician in developing the cadastre system, in collaboration with the registry office, offering clear justifications for property valuations to citizens. Innovated a **unique calculation method for assessing house values** across the Basque Country, enhancing the system's accuracy and transparency in property valuation.

### Ontology Engineering Group

Data Analyst and Developer Intern

Madrid, Spain  
Sept. 2021 – Sept. 2022

**Description:** Tasked with analyzing academic papers housed within institutional repositories and developing a sophisticated system to construct knowledge graphs. This system is designed to facilitate advanced querying capabilities, addressing inquiries related to the principles of Open Science.

### Savestars Consulting

Developer

Madrid, Spain  
June 2020 – July 2021

**Description:** Developed a Python-based system to extract images from NASA's VNP46A2 satellite, process these images, and implement a mask for a designated area of the peninsula. This system was specifically engineered to assess the level of light pollution in a particular region.

## EDUCATION

### Carlos III University of Madrid

MSc in Applied & Computational Mathematics [English]

Madrid, Spain  
Sept. 2022 - June 2023

**GPA:** 8.38/10 with 1 Honourable Mention in Advanced Analysis.

**Relevant Coursework:** Biological Inspired Artificial Intelligence, Modelling and Nonlinear Analysis, Optimization, Stochastic Equations for Finance and Biology, Complex Biological and Socioeconomic systems, Computational Linear Algebra, Computational techniques for Differential equations, Methods for Nonlinear differential equations, Applied discrete mathematics.

### Madrid's Polytechnic University

Bachelor's degree in mathematics & computer science [Spanish]

Madrid, Spain  
Sept. 2018 - June 2022

**GPA:** 9.4/10 with 14 Honourable mentions.

**Relevant Coursework:** Data Analysis, Software Engineering; Operating Systems, Artificial Intelligence, Databases, Modelling, Programming (Imperative, Object Oriented, Functional, Logic, Systems), IT Project Management, Topology, Calculus, Algebra, Pure Mathematics.

## PROJECTS

### Basic Numerical Methods in Python - Student Oriented

June 2023

**Description:** My end of master's thesis aims to develop an open-source PyPi project that includes a scripted version of the numerical methods taught in universities and a Jupyter-integrated GUI for real-time visualization of those. The goal is to help students understand the methods and promote learning Python instead of MATLAB, which is not as popular or accessible as Python in the current job market.

- This project was awarded the **'Most Innovative Project of 2023'** by Logicalis in the Logicalis Innovation Challenge, recognizing its potential to significantly impact educational practices and student learning experiences.

### Sturm Liouville Problem and Models based on differential equations on the field of Acoustics

June 2022

**Description:** Pursued a comprehensive study of the Sturm-Liouville theory and modelled stringed musical instruments to explore the relationship between mathematics and music. The aim of the research was to answer questions such as: what factors contribute to the distinct sound of instruments like a violin and a piano, and how does mathematics play a role in the creation of music.

## AWARDS

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- Logicalis Innovation Challenge
- Cambridge Advanced Certificate (C1)
- Academic Excellence Grant 2021 & 2022
- Academic Excellence Award for Representative Agents of Banco Mediolanum 2022

## ACTIVITIES

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### **Violinist**

Three years of musical performance with a daily practice of 2 hours, enhancing personal skills such as emotional intelligence, patience, commitment, teamwork, and self-motivation. Participation in the European Youth Music Orchestra also included.

- Current repertoire: Salut d 'Amour (Edward Elgar), Partita BWV 1004 – Allemande (J.S. Bach), Partita BWV 1006 – Gigue (J.S. Bach), Concerto for 2 Violins BWV 1043 (J.S. Bach), Partita BWV 1004 – Gigue (J.S.Bach)

### **Swimming**

Actively training for a 5km sea swimming semi-marathon aimed at supporting individuals with ALS, demonstrating commitment to personal health, endurance sports, and philanthropic efforts to make a meaningful difference in the community.

## ADDITIONAL

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**Technical Skills:** Advanced in Python, SQL, Java, Bash, Flask, FastAPI, SQLAlchemy, Numpy, Sympy, Pandas, Matplotlib, Plotly, Bqplot, PyTest, Docker, Git, GitHub Actions, MariaDB, MySQL, SQLite, NoSQL, Jupyter, Office 365, Windows, Linux, Raspberry, Arduino, Heroku, LlamaIndex, HuggingFace, OpenAI, JavaScript, Bootstrap.

**People Skills:** Leadership, Public Speaking, Critical Thinking, High Self-Motivation, Dependable

**Languages:** English (C1) and Spanish (Native)