



# ANTONIO SALDAÑA

R&D Computer Engineer | Bachelor's Degree in Computer Engineering

## ABOUT ME

I am a Computer Engineering graduate with hands-on experience in multidisciplinary projects across both research and industrial environments.

My background includes the development of web-based tools and data-driven systems, with a growing focus on applied Artificial Intelligence, including LLM-based solutions and Retrieval-Augmented Generation systems.

I value collaborating in multidisciplinary teams and adapting quickly to new technologies, with a practical and impact-driven approach.

## CONTACT

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## EXPERIENCE

- R&D Computer Engineer** Nov. 2024 - Present  
University of Oviedo – Research Group on Engineering Projects and Sustainability
  - Development of Python-based web tools for the integration of Retrieval-Augmented Generation (RAG) and Large Language Models (LLMs) into industrial sustainability projects, with a focus on practical applications and insight-driven solutions.
- Computer Engineering Research Intern** Oct. 2023 - Jul. 2024  
University of Oviedo – Research Group on Engineering Projects and Sustainability
  - Participated in the design and implementation of sustainability-oriented solutions through an industry-academic collaboration. The work focused on data modelling, ML-based digital twins, and web systems for carbon footprint management. Supported industrial partners like Idesa and Gonvarri in building web-based tools for data-informed decision-making.

## EDUCATION

### Master's Degree in Computer Engineering

Polytechnic School of Engineering, University of Oviedo (Gijón)  
Sep. 2024 – Present

### Bachelor's Degree in Computer Engineering – Information Technologies (Bilingual Program)

Polytechnic School of Engineering, University of Oviedo (Gijón)  
2019 – 2024

**Graduated with Honors in the Final Degree Project (TFG)**

### ERASMUS+ Exchange Program

Luleå University of Technology, Sweden  
Jan. 2022 – Dec. 2022

## LANGUAGES

**Spanish** (Native) | **English** (B2) | **French** (Basic)

## PROJECTS

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### **HIPERAUTOMATIZACION (Oct. 2025 – Present)**

Development of an agentic AI system for querying industrial SCADA data using natural language, with temporal reasoning and tool-based execution over industrial data.

### **SMARTBIDRIGGING (April 2025 – Present)**

Development of a system for detecting collusion in procurement processes, using Retrieval-Augmented Generation (RAG) and Graph Neural Networks (GNNs) as the technological foundation.

### **HINCADO – Gonvarri Solar Steel (2024)**

Created a dedicated data model and visual user interface to improve pile-driving depth optimization for large-scale solar farm installations, using LISP and R. [Project ID: FUO-23-377]

### **METALCHAIN – Idesa (2023–2024)**

Developed a web system based on Verifiable Credentials to optimize and ensure traceability in the carbon footprint calculation process for heavy boiler equipment. [Project ID: SV-PA-22-RIS3-4]

### **FARM 4 FUTURE – Gonvarri Industries (2023)**

Designed and optimized digital twins using LSTM-based machine learning models to support predictive decision-making in industrial sustainability scenarios. [Project ID: SV-PA-22-RIS3-1]

## TECHNICAL CERTIFICATIONS & PRESENTATIONS

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### **Top 100 IMPACT CREATORS 2025**

Recognized as one of the 100 most impactful contributors to innovation and sustainability projects within the U4Impact community.

### **Certificate in Communication for Technical Projects – Draft Estimation with Drones and Deep Learning**

AEIPRO (Spanish Association of Project Engineering) – July 2025

### **Certificate in Communication for Technical Projects – Identification of Spills in Rivers using Hyperspectral Imaging and Deep Learning**

AEIPRO (Spanish Association of Project Engineering) – July 2025

### **Certificate in Communication for Technical Projects – METALCHAIN Web Application**

AEIPRO (Spanish Association of Project Engineering) – July 2024

### **DeepLearn 2022 – 7th International School on Deep Learning**

IRDTA, October 2022

## LANGUAGE CERTIFICATIONS

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### **European Diploma Supplement in English (SET)**

University of Oviedo – 2024

### **First Certificate in English (B2)**

Cambridge University – Credential ID: 176ES0720286

## PUBLICATIONS

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### **A Dual-Mode Retrieval-Augmented Generation System for Interactive Question Answering of Public Tender Documents**

International Conference on Project Management (ProjMAN 2025) – Abu Dhabi

- Designed a chatbot using a dual-mode RAG approach to answer questions over public tender documents. Combined semantic and lexical search to generate accurate, verifiable responses, supporting non-technical users in procurement evaluation.

### **Identification of Spills in Rivers using Hyperspectral Imaging and Deep Learning**

International Congress on Project Management and Engineering (CIDIP), AEIPRO, 2025

- Designed a system to identify pollutant spills in rivers by combining hyperspectral imaging with deep learning, enabling precise and automated environmental monitoring

### **Draft Estimation with Drones and Deep Learning – An Alternative to Traditional Bathymetry**

International Congress on Project Management and Engineering (CIDIP), AEIPRO, 2025

- Developed a drone-based system using deep learning to estimate river draft as an alternative to traditional bathymetric methods

### **Accreditation of the Carbon Footprint of Heavy Boiler Equipment Using Verifiable Credentials**

International Congress on Project Management and Engineering (CIDIP), AEIPRO, 2024

- Developed a web system dedicated to carbon footprint certification of industrial equipment using Verifiable Credentials, improving traceability and data integrity across the supply chain.  
[DOI: [10.61547/2405012](https://doi.org/10.61547/2405012)]

### **Point Cloud Mapping with Drones Using Ultrasonic Sensors**

Luleå University of Technology, Sweden, June 2022

- Explored the use of ultrasonic sensors mounted on drones to generate 3D point clouds, with potential applications in navigation and spatial analysis, using Python and TypeScript. [ISBN: 978-91-8048-114-4]

## SKILLS & TOOLS

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**Languages:** Python, Javascript, C#, Java, HTML, CSS, PHP

**Tools:** Git, Docker, SQLite, VSCode, SQLite, ER & Database Design

**AI & Data:** LLMs, RAG, AI Agents, Scikit-learn, TensorFlow

**Frameworks & Libraries:** .NET, Verifiable Credentials

**Web:** REST APIs, SOAP, Django

**Soft Skills:** Adaptability, communication, multidisciplinarity