

Héctor Álvarez Pérez

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PROFESSIONAL SUMMARY

Data Scientist and Machine Learning Engineer with a strong mathematical background. Experienced in building predictive models and deploying them into production environments using MLOps best practices. Passionate about bridging the gap between statistical analysis and scalable software solutions.

EDUCATION

BSc in Computational Mathematics and Data Analysis

Exp. 2026

Universitat Autònoma de Barcelona (UAB)

- Focus: Statistical Modeling, Algorithm Design, Machine Learning Theory.

EXPERIENCE

Machine Learning Engineer Intern | Aily Labs

Oct 2024 – Present

Specialized in Decision Intelligence & Agentic AI workflows.

- Developed scalable **MLOps pipelines** on AWS using Docker and Kubernetes, reducing model deployment time and ensuring high availability for the global platform.
- Engineered **Agentic AI workflows** using **LangChain** and LLMs to deliver real-time, conversational insights across Finance and Supply Chain modules.
- Collaborated with cross-functional teams to integrate predictive signals into the core application.

Data Scientist Intern | Altia-IN2

Jul 2024 – Aug 2024

- Architected a synthetic data generation pipeline for medical formats using Python, enabling privacy-compliant testing.
- Developed an end-to-end automation solution utilizing **Python** and **n8n**, streamlining internal data processing workflows.

Computer Vision Researcher | Computer Vision Center (CVC)

Oct 2023 – Feb 2024

- **Research Focus:** Domain Adaptation in Semantic Segmentation.
- Fine-tuned segmentation models on synthetic datasets using **LoRA (Low-Rank Adaptation)**, optimizing computational efficiency while maintaining accuracy.
- Implemented **Active Test-Time Adaptation (ATTA)** strategies to enhance model performance under challenging weather conditions with minimal user interaction.

TECHNICAL PROJECTS

AI ChatBot for Telemedicine (HackUAB 2025)

- Developed a full-stack telemedicine platform featuring an AI medical assistant, doctor management system, and interactive maps.
- *Stack:* Python, React, NLP APIs.

LaLiga Fantasy Price Predictor

- Built a regression-based ML model to forecast player prices, achieving high accuracy by engineering features from scraped performance stats.
- *Stack:* Python, Scikit-learn, BeautifulSoup, Pandas.

Image Captioning with Deep Learning

- Created an Encoder-Decoder architecture (CNN + LSTM) in **PyTorch** to generate natural language descriptions for images automatically.

TECHNICAL SKILLS

- **Data Science & ML:** Statistical Modeling, Predictive Analytics, Deep Learning, GenAI, Computer Vision.
- **Infrastructure & MLOps:** AWS, Docker, Kubernetes, CI/CD Pipelines, Git.
- **Frameworks:** PyTorch, Scikit-learn, LangChain, Pandas, NumPy.
- **Tools:** Amazon RDS, MongoDB, Neo4j, n8n, Linux.
- **Languages:** Spanish (Native), Catalan (Native), English (C1 - Advanced).