Fran Abellán PhD

Lead Data Scientist & AI Expert

Data Science leader with 7+ years driving high-impact ML and AI initiatives across insurance, energy, and telecom. PhD in Astrophysics with deep expertise in LLMs, predictive modeling, and cross-functional team leadership. Proven track record translating complex AI capabilities into measurable business outcomes.

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◆ PROFESSIONAL EXPERIENCE

Lead Data Scientist at CoverWallet, an Aon company
Sep 2025 — Present

Leading the Data Science team, driving AI strategy, and delivering agentic and LLM-powered solutions at the core of the company's operational workflows.

- Architected the **AI Document Engine** — a production API that classifies insurance documents across 30+ types and extracts 15+ structured fields (premiums, coverages, dates), by combining fine-tuned vision models and LLM pipelines, **reducing manual document processing time by ~70%** across multiple automation workflows
- Designed and deployed **internal MCP (Model Context Protocol) integrations** enabling natural language interaction with internal APIs and tools, cutting time-to-insight for operational teams by ~40%
- Built **agentic workflows** for case and email analysis using RAG pipelines and FastAPI services, automating triage and routing for ~100 daily interactions and reducing manual handling by ~35%
- Mentored a team of 3 data scientists (junior to senior), establishing code review processes, technical standards, and career development frameworks
- Represented Data Science in **company-level AI strategy decisions**, aligning roadmap priorities with C-suite and product leadership

`Python` `LLMs` `Agentic AI` `MCP` `RAG` `FastAPI` `Team Leadership`

Senior Data Scientist at CoverWallet, an Aon company
May 2022 — Sep 2025

Delivered AI-powered insurance solutions for risk assessment, agent productivity, and document automation.

- Architected the **Risk Assessment Tool (RAT)** using LLMs and NAICS-based industry classification, by generating dynamic risk questions per client profile, **improving agent consultation quality and increasing cross-selling conversion by ~20%**
- Designed an ML-driven **Capacity Model** that scores account complexity across 10+ variables to balance agent workload, **reducing overallocation incidents by ~30%** and improving team throughput
- Led **Industry Classification and Lead Scoring** ML models that improved sales prioritization, **increasing qualified lead conversion rate by ~15%**

`Python` `LLMs` `NLP` `Computer Vision` `FastAPI` `MLOps`

Senior Data Scientist at Endesa
May 2020 — Apr 2022

Strategic data science initiatives in energy optimization, demand forecasting, and customer intelligence.

- Developed **consumption optimization algorithms** analyzing usage patterns for 100K+ customers, delivering personalized energy-saving recommendations that **reduced average energy cost by ~8% per household**
- Created **time-series forecasting models** for electricity and gas demand with MAPE <4%, enabling more accurate resource allocation and **reducing supply chain imbalance costs by ~12%**
- Engineered a **dynamic pricing system** balancing profitability with churn risk, by applying survival analysis and price elasticity models, **contributing to a ~5% improvement in customer retention**
- Built an **automated data enrichment pipeline** (NLP + web scraping) that enhanced profiles for 200K+ customers, improving segmentation precision for targeted campaigns

`Python` `SQL` `Redshift` `Time Series` `NLP`

Data Scientist at Telefónica — LUCA AI
Nov 2018 — May 2020

End-to-end data science solutions for 5 enterprise clients across finance, pharma, energy, and telecom.

- Built a **predictive maintenance system** for Santander Tecnología using sensor time-series and gradient boosting, **reducing unplanned downtime by ~25%** and cutting maintenance costs
- Developed **inventory forecasting models** for Lilly across 15+ manufacturing materials, achieving forecast accuracy >92% and **reducing excess inventory holding by ~18%**
- Created a **fraud detection system** for Naturgy analyzing 2M+ smart meter readings per month using anomaly detection, **flagging ~95% of fraudulent patterns** with <5% false positive rate
- Delivered **GLP demand forecasting** for Repsol at country, regional, and depot levels, enabling proactive logistics planning and **reducing stockout events by ~20%**

`Python` `AWS` `PySpark` `PostgreSQL` `Tableau`

◆ EDUCATION

PhD in Astrophysics, Cum Laude
2014 — 2017

University of Valencia

Dissertation: "Tomography of the SN 1987A ejecta and AGN core-shifts with high-precision astrometry"

MSc in Astrophysics
2011 — 2013

Univ. Complutense Madrid & Univ. Autónoma Madrid

BSc in Physics
2006 — 2011

University of Murcia

◆ CORE SKILLS

● **AI & LLMs**

`LangChain` `RAG` `Agentic AI` `MCP` `Prompt Engineering` `Vector DBs`

● **ML & Data Science**

`Python` `scikit-learn` `XGBoost` `PyTorch` `MLflow` `Time Series` `NLP (spaCy)` `Computer Vision`

● **Engineering & MLOps**

`Docker` `AWS` `FastAPI` `Airflow` `SQL` `GCP` `CI/CD`

● **Leadership**

`Team Management` `Mentoring` `Stakeholder Communication` `AI Roadmap` `Strategic Planning` `Cross-functional Collaboration`

◆ LANGUAGES

Spanish ●●●●●
English ●●●●○
German ●●○○○

◆ PUBLICATIONS

20+ Peer-Reviewed Papers
NASA Astrophysics Data System ↗

◆ ENTREPRENEURSHIP

E-commerce Founder
Founded and operate a data-driven e-commerce business applying ML-based growth strategies

◆ PROJECTS

NBA Fantasy Analytics Platform
Full-stack app with daily-updated NBA player performance analytics and automated data pipelines — built with Next.js, deployed on Vercel

nba-yahoo-fantasy-daily-dose.vercel.app ↗