

FACUNDO JOEL ALLIA FERNANDEZ

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Data Scientist and AI Engineer with 7+ years building AI systems, data pipelines and quantitative models that run in production. Hands-on with LLM pipelines, RAG, agents and LLM evaluation, ETL/ELT, machine learning and forecasting, and derivatives pricing and risk, using Python, SQL and cloud platforms. Combines deep quantitative finance expertise with applied AI and data engineering.

WORK EXPERIENCE

Banco Santander Corporate & Investment Banking – Senior Data Scientist & Automation Engineer | 2025 – Present

- Design and implement scalable data solutions combining Python, SQL, and cloud technologies to optimize financial processes and reduce operational costs.
- Develop automated ETL pipelines and data integration workflows from multiple sources including enterprise systems, data lakes and financial platforms.
- Build end-to-end applications and analytical tools with interactive dashboards, enabling data-driven decision-making.
- AI Ambassador driving AI adoption across the organization, developing LLM, RAG and MCP use cases and supporting their implementation within business units.

Technologies: Python, SQL, Databricks, Murex, Power BI, RPA, Azure, ETL/ELT pipelines, LLMs, RAG, MCP, model deployment

PricewaterhouseCoopers (PwC) - Quantitative Analyst | 2024 – 2025

- Specialized in complex derivatives pricing using stochastic models and Monte Carlo simulation. Developed credit derivatives valuation engine with Python implementing CVA/DVA frameworks.
- Conducted market risk assessments and built XVA calculation models for regulatory compliance, collaborating with audit teams on validation frameworks.
- Regular contributor to technical newsletter analyzing Decentralized Finance trends and their impact on traditional markets, leveraging blockchain analytics and quantitative research.
- Performed scenario analysis and stress testing for financial instruments using Python, R, and proprietary risk systems.

Technologies: Python, R, Databricks, ML Models, PySpark, Power BI, Azure, Murex, Bloomberg Terminal, Reuters

Accenture - Financial Data Transition Specialist | 2022 – 2023

- Developed KPIs and financial metrics for enterprise reporting, identifying process optimization opportunities boosting profitability.
- Implemented forecasting tools and management software improving financial visibility and decision-making.
- Worked with SAP HANA and cloud platforms for large-scale data integration and analytics.

Technologies: Python, AWS, SAP, SAP HANA, SQL, ETL, Azure, Microsoft Excel, SharePoint, Databricks, PySpark

Nixtla - Data Scientist | 2022

- Performed time series forecasting and modeling (ARIMA, ETS, CES) using Python and R for predictive analytics.
- Developed automated forecasting pipelines on Databricks with PySpark for scalable model deployment.
- Authored technical documentation and conducted model performance evaluations ensuring optimal accuracy.

Technologies: Python, R, SQL, PySpark, Databricks, AWS, Docker, APIs, CI/CD, MLOps, Git/GitHub

Matba Rofex - Institutional Derivatives Trader - Market Making | 2021 – 2023

- Actively traded futures and options on financial assets and commodities, managing market-funded account to meet volume standards.
- Demonstrated strong quantitative skills forecasting market trends, **consistently outperforming benchmark for two consecutive years**.
- Developed Python-based trading analytics and backtesting frameworks for strategy optimization.

Technologies: Python, SQL, APIs, Trading platforms (Matriz, Etrader), TradingView

Logos Servicios Financieros - Financial Advisor & Founder | 2020 – Present

- Provide financial advisory services and portfolio management with customized investment strategies.
- Established and managed proprietary client portfolio ensuring high-quality service and satisfaction.

Libertad S.A. - Commercial Data Analyst | 2021 – 2022

- Developed monthly/annual budgets and demand forecasts incorporating macroeconomic variables via interactive dashboards.
- Implemented real-time sales data ingestion and analysis solution at scale, adding significant operational value.

Technologies: Python, SQL, SAP, Power BI, Microsoft Excel, proprietary ERP/CRM

Peugeot Avant Autocity - Data Analyst | 2019

- Maintained and structured operational databases using SQL, Excel, SAP and proprietary ERP/CRM systems.
- Built dashboards and performance reports supporting business decisions.

Technologies: SQL, Microsoft Excel, SAP, Power BI, proprietary ERP and CRM

SELECTED PROJECTS

- **Production LLM research pipeline:** scheduled pipeline that ingests broker research, drafts structured notes with the Claude API, requires human approval on Telegram and publishes to WhatsApp, Telegram and Instagram.
- **LLM signal extraction engine:** extracts Pydantic-validated signals from video transcripts, PDFs and messages and crosses them with broker positions through a rules-based alert engine.
- **Probabilistic pricing for prediction markets:** GBM and barrier models with fat-tailed Monte Carlo, a real-time data collector with fallback price oracles, and grid search over train, validation and test splits.
- **Market-implied inflation and FX engine:** open-source live application applying Fisher decomposition and forward rates to Argentine Treasury curves, with a tested analytics core.
- **Open-source quant and ML research:** multi-indicator trading screener, futures spread forecasting with Prophet, S&P 500 clustering and NLP analysis of crypto volatility.

STUDIES AND CERTIFICATIONS

- **Postgraduate in Quantitative Systems and Models for Algorithmic Trading** - Universidad Politécnica de Madrid (2027)
- **Master's in Finance** - EAE Business School Madrid (2024) - *Minor in Smart Money & Start Ups*
- **Postgraduate Degree in Quantitative Finance** (Quant Program) - UCEMA (2022)
- **Data Science Coding Bootcamp** (+700h.) - Henry (2022)
- **Financial Markets Specialization** (Derivatives trading focus) - Bolsa de Comercio de Rosario (2021)
- **Bachelor of Business Administration** (Finance Specialization) - Universidad Nacional de Córdoba (2020)

  Teaching assignment in Stock Exchanges and Stock Market
- Financial Market Suitability and Stock Market Producer Registration Nº 1271 - CNV (2021)

Courses and certifications:

- Cloud Practitioner Essentials - AWS
- Python for Finance, Investment & Data Analytics - Udemy
- Regulatory Consulting - PwC
- Time Series Forecasting - Kaggle
- Digital Disruption in Finance - UNC
- PLAFT - Balanz University

TECHNICAL SKILLS

- LLMs, LLM evaluation, agents, RAG, MCP
- Python: NumPy, Pandas, SciPy, visualization libraries
- Machine Learning: TensorFlow, Scikit-Learn, LightGBM
- NLP, probability and statistical methods
- FastAPI, Pydantic, pytest, Next.js, React, TypeScript
- Monte Carlo, stochastic models, XVA, backtesting
- Bloomberg Terminal, Reuters Terminal, Murex
- Prompt engineering, structured outputs
- SQL, ETL/ELT, PySpark, Databricks
- Forecasting: ARIMA, ETS, Prophet
- Azure, AWS, Docker, CI/CD, MLOps, Git
- C++, R, Power BI, Microsoft Office
- Financial modeling, valuation, risk analytics
- Blockchain, cryptocurrencies and DeFi

LANGUAGES

- **Advanced English**
  - EF SET English Certificate 77/100 (C2 PROFICIENT) - EF Standard English Test
  - Business English Certificate Vantage (CEFR LEVEL B2) - Cambridge University
- **Basic Portuguese** (A2) - Business oriented
- **Native Spanish**

PUBLICATIONS

- “Construction of risk-neutral probability density functions through butterfly spreads”. BCR. Jun 30, 2022. Available at SSRN
- “Stock classification using k-means clustering”. UCEMA. Dec 7, 2022. Available at SSRN