David Orive-Miguel

ML engineer + PhD in applied mathematics

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Webpage: https://dorive.github.io/
GitHub: https://github.com/dorive

Professional summary

Machine learning engineer with a strong background in applied mathematics, specializing in designing and evaluating AI/ML systems. Passionate about driving innovation in AI to enhance intelligent assistant technologies. Skilled in **machine learning**, **data science** and **software engineering**. Check my **webpage** and **GitHub** repository for more information.

Work experience

10/2023–Currently **Machine learning engineer**, *IKEA*, Madrid (Spain).
Expertise in developing AI-powered tools to enhance customer experiences and optimize business operations.
- Developed and evaluated an AI-powered Visual Shopping Assistant using LLM and RAG systems, enhancing customer engagement and search accuracy.
- Designed a Computer Vision system to monitor in-store queues, optimizing customer satisfaction and operational efficiency.
- Built predictive models to forecast sales for IKEA Spain's stores and selling channels, driving localized, data-driven decision-making.
- Ensured the scalability and reliability of ML solutions, collaborating with cross-functional teams globally.

01/2020–10/2023 **Quant trader + Data Scientist**, *Arfima trading*, Madrid (Spain).
Quant research of algorithmic trading strategies using advanced data analytics. Broad knowledge of financial industry. Some of my key achievements are:
- Developed evaluation frameworks for pricing and modeling fixed-income market dynamics using Python.
- Led a market-making project, crafting automated algorithmic portfolios in C#.
- Built efficient data pipelines using SQL and integrated Bloomberg/Refinitiv APIs for real-time analytics.

10/2016–10/2019 **PhD in biomedical imaging and signal processing**, *CEA*, Grenoble (France).
Development of new diffuse optical tomography algorithms and signal processing techniques for in-vivo neuromonitoring of adults and newborn infants. Marie-Curie fellowship under BITMAP EU project.
- Developed and validated advanced reconstruction algorithms for diffuse optical tomography, applied to in-vivo neuromonitoring of adults and infants.
- Collaborated with international research labs in the UK, Italy, and Germany, ensuring the quality and applicability of algorithms in real-world scenarios.
- Published research papers and presented at international conferences in Europe and the USA.

Education

2018–Now **Degree in physics**, *UNED*, (Spain).
Part-time program while working full-time, with over 70% of courses completed.

2014–2016 **Master's degree in industrial mathematics**, *University of Santiago de Compostela*, (Spain).
Mathematical modelling of industrial processes. Thesis: signal processing for NMR spectroscopy (Mestrelab).

2010–2014 **Degree in computer science/engineering**, *University of Deusto*, (Spain).
Software design, machine learning and scientific programming.
Erasmus experience in Pázmany Péter Catholic University(Hungary) - Machine learning and neural networks.

Programming

Python (Advanced: PyTorch + Pandas + Spark), **SQL** (Intermediate) and **C/C#** (Basic).

Software skills

Version control: Git. **OS:** UNIX. **Office:** Excel and LaTeX. **BI tools**: PowerBI.

Languages

Spanish (native), **English** (C1-C2), **French** (B1) and **Basque** (B2).