Max Vilarasau Serra

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About

I'm a data-driven professional with a background in Strategy Consulting, Machine Learning, Artificial Intelligence, and Classical Music. My unique background allows me to bridge the gap between technical innovation and business strategy by turning complex ideas into scalable, user-focused products. My strength lies in translating advanced technical concepts into strategic initiatives that create meaningful value for both users and organizations.

Experience

Bluecap Management Solutions September 2025 – Current
Associate Madrid, Spain

- Developing a risk-assessment algorithm for a leading Spanish bank to estimate business loan default probability and optimize lending decisions
- Incorporating Explicable Machine Learning techniques to design the pre-delinquency algorithm

Riedulab February 2023 – June 2023
Analyst Barcelona, Spain (Remote)

- Analyzed the soft skills of 1,496 adolescent students from Spanish and Portuguese schools; drew inferences employing Factor Analysis *&* Structural Equation Modeling

Education

Master of Science in Business Analytics – ICADE October 2024 – July 2025
Major in Machine Learning *&* Artificial Intelligence Madrid, Spain

- Honors (3): [1] AI *&* Reinforcement Learning – [2] Quantitative Finance – [3] Thesis
- GPA: 8.8/10.0

Bachelor in Global Studies *&* Management – Ramon Llull University September 2020 – June 2024
Major in Management *&* Digital Business Barcelona, Spain

- Honor (1): [1] Applied Statistics
- GPA: 7.1/10.0

Degree in Classical Piano – Granados-Marshall Academy September 2016 – June 2020
Studied under Pianist and Prof. Xavier Ricarte Barcelona, Spain

Achievements *&* Awards

- Awarded Best Thesis during M.Sc. studies → tinyurl.com/DR4DRL
- Co-authored an article in a Q2 journal → doi.org/10.1016/j.explore.2023.07.008
- Jiu-Jitsu Blue Belt awarded by Robin Gracie; son of Hélio Gracie (founder of Brazilian Jiu-Jitsu)

Skills, Languages *&* More

- **Technical Skills**: Python (some libraries that I'm familiar with: NumPy; Pandas; SciPy; SciKit-learn; Keras; PyTorch; TensorFlow; Stable Baselines3...); Git; LaTeX
- **Industry Skills**: Artificial Intelligence; Machine Learning; Reinforcement Learning; Deep Learning; Research; Econometric Analysis; Financial Modeling
- **Methodologies**: Agile; Product Roadmapping; A/B Testing; User Story Mapping; KPI/OKR Definition
- **Product Tools**: Jira; Figma; Trello
- **Languages** (5): English (native); Spanish (native); Catalan (native); French (advanced); Russian (beginner)
- **Hobbies**: Classical Music; Strategy Games; Combat Sports
- **Sports**: Judo; Jiu-Jitsu; Grappling; Wrestling

Some Projects *(these and more available on my GitHub)*

- **Domain Randomization for Deep Reinforcement Learning** → /DR4DRL
  - Researched how Domain Randomization improved the performance of DRL agents in trading
  - Developed and trained DDPG-based trading agents under randomized market conditions
  - Achieved higher Sharpe ratios and reduced overfitting vs. the baseline models
  - Validated model robustness demonstrating statistically significant performance gains
- **Clustering Unacquainted Students at ICADE Graduate Campus** → /Unsupervised-ML-Clustering-Students
  - Developed a ML model to analyze behavioral patterns among students using Hierarchical Clustering and PCA
  - Designed a *Affinity Test* to group individuals based on multivariate similarity metrics
  - Interpreted cluster structures through visualization and explained variance analysis to extract actionable insights
- **Recursive Neural Networks for Apple Stock Price Prediction** → /Deep-Learning-RNN-Apple-Stock
  - Developed a deep learning model for time-series forecasting of Apple stock prices using LSTM networks
  - Achieved accurate next-day closing price predictions using optimized hyperparameters
  - Visualized learning dynamics and error metrics to evaluate model convergence and predictive performance