

JOSÉ LOPE ALBA

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Academic Qualifications

- Sep.19-Sep.26 **PhD Candidate** on **Galois Differential Theories and Path integrals on Quantitative finance equations** at the **Universidad Politécnica de Madrid & Universidad Complutense de Madrid**.
Papers:
- <https://arxiv.org/html/2411.18154>
- Apr.15-Jun.16 **Masters in Stock Exchanges and Financial Markets** at **IEB** (Instituto de Estudios Bursátiles).
(Valuation of Financial Instruments). Score: 76
- Sep.08–Sep.15 **Ingeniero de Caminos, Canales y Puertos** (M Eng. Civil Engineering – 6 year programme) at the **Universidad Politécnica de Madrid**. Specialization in Structures and Foundations. Score: 62

International Certifications and Licenses

- Nov.18-Nov.19 **FRM(Financial Risk Manager)**. GARP.
- Jun.16-Jun.17 **CQF(Quantitative Finance Certificate)** Fitch Learning, Paul Wilmott Scholarship. Score: 92
- May.18-Current **EEX: Trade Registration**. European Energy Exchange AG.

Professional Experience

- Ago.19-Current **Head of Quantitative Analysis at W2M, S.A:**
Quant:
- Development of Risk Management libraries in R.
 - Pricing Libraries.
 - Web Scraping: Search and processing of fundamental and sentiment data.
- Trading:**
- Systematic Trading Strategies both physical and financial.
 - Batteries management optimization.
- Jan.22-Current **Sr Quantitative Manager at Intermoney Consulting:**
Quant:
- FRTB: SA, IMA.
 - Derivatives validation.
 - Priips implementation.
 - Development of pricing calculators in both R and Python.
- May.18-Ago.19 **Quant-Trader at Energya-VM (OHL group):**
Hedging and Pricing derivatives:
- Delivery Volatility modelling and forecasting.
- Trading:
- Power:**
- DA Modelling with no linear analysis.
 - Modelling the thermal gap of the Spanish energy system, to predict the offer and demand curves, in the supply and generation markets.
 - Risk premia studies between delivery and future prices.
 - Developing Spread Strategies in both long and short term, using statistic techniques such as cointegration. *With R and VBA.*

- Systematic Trading with both Machine and Deep Learning applications. *With R & Python (TensorFlow and other Google Features)*
- Cointegration Engine which studies all possible combinations within a user selected pool of assets. *With R.*
- Delivery Volatility modelling and forecasting.

CO2 Emissions:

- Harmonic Patterns recognition. Inference movement over different power tenors. Focused on Germany derivatives. *With R and C++.*

Brent:

- Time series prediction with no linear analysis, and fractal patterns recognition. *With R.*

• Feb.17-May.18 **Quant-Supervisor at PwC(Quantitative Division):**

Leading methodology, development and design.

Banking:

- Derivatives pricing. Exotics and Vanilla OTCs
- Modelling and stress testing of IRRBB: NMD's, IPF's and Mortgage. Matlab, R y VBA.
- FRTB on IFRS9 implications.
- Speaker at Tier 1 banks and financial institutions such as CNMV.
- Development of a tool for analysis of liquidity, credit and capital for banks in Kazakhstan (ILAAP, ICAAP) and finally obtain a rating in accordance with their situation.

Insurance:

- Development of methodology and implementation of PRIIPs applied tool. Calculation of premiums, disaggregated costs and risk category of savings and life products.

Ago.16-Feb.17 **Quant-Sr.Consultant at PwC(Quantitative Division):**

Leading methodology, development and creation.

Banking:

- Derivatives pricing. Exotics And Vanilla OTCs
- Tool development of FRTB Standard Model Approach. Using VBA and further development on web application. And Risk Measures: Expected ShortFall and VaR.
- Modelling of Stochastic CVA, DVA and FFVA model for audit works. R and Matlab.
- Pricing of Exotics and non vanilla derivatives. R and Matlab.
- Tool development of Asset Allocation, subject to non standard constraints.
- Big data methodology for preclassified and preapproval credits, with clients and non clients. R and Python.
- Preamortization Modeling. R and VBA
- FRTB on IFRS9 implications.

Assurance:

- Tool development of Asset Allocation subject to capital requirements. VBA and R implementation Tool Development of Investment portfolio to Assurance. Both further developments on web application.

Energy market:

- Development of time series forecasting tool. Prices prediction using the Chaos theory and implementing on R and C++.
- Risk measures: VaR calculations.

Sep.15-Jul.16 **Quant-Consultant at Indra Business Consulting:**

Development of *Big Data* methodology for credit pre-classification and pre-approval.

Market Risk:

Fundamental Review of Trading Book(FRTB). Implementation and creation of an own developed VBA calculator, to obtain the Delta, Vega and Curvature requirements from the Standard Model Approach.

Energy Market:

- Pricing power derivatives.
- Design and optimization of a demand management calendar.

Teaching Experience

Sep.22-Current	Python Professor at master's in business Analytics at IEB. https://www.ieb.es/estudios-ieb/grados/grado-en-ade-master-in-business-analytics/
Oct.21-Current	Associate Professor at Universidad Autónoma de Madrid. Quantitative Economy Department: https://www.uam.es/Economicas/Lope-Alba,-Jos%C3%A9/1446824434424.htm?language=es&pid=1242649342057&title=Lope%20Alba%20Jos%20os?
Apr.18-Current	Course Coordinator at IEB & Lecturer. Quantitative Finance and Derivatives pricing: https://www.ieb.es/estudios/executive-education,programas-especializacion/finanzas-cuantitativas-valoracion-derivados/ .
Sep.19-Jun.20	Lecturer at OMIE. Statistical modelling in R. 80h per year.
Jan.19-Jan.20	Master Thesis Supervisor at UNED. Algorithmic trading: https://www.mastermemfi.com/
Jan.20-May.20	Master Thesis Supervisor at AFI. Machine learning strategy on EURUSD.
Jan.25-May.25	Master Thesis Supervisor at UNAV. News Driven Systematic Trading Strategy on FX assets.

Languages

- **Spanish: Native.**
- **English C1:** Advanced level. **Trinity Grade 10** at English Connection 2012.

Programming skills

- **R:** Advanced level.
- **Python:** Advanced level.
- **VBA:** Advanced level.
- **Latex:** Advanced Level.
- **Matlab:** Intermediate level.
- **C++:** Intermediate level.
- **DDBB: SQL:** Basic Level.
- **Java:** User level.

Data Providers

- Bloomberg
- Reuters