Samy MEKKAOUI

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Education

MSc in Quantitative Finance — **M2MO(Ex DEA Laure Elie)-Université Paris Cité**
Paris, France — *2023 – 2024*

- Derivatives Modeling, Data Modeling & Statistical Inference, Stochastic Calculus & Diffusion Models, Stochastic Control,Monte-Carlo Methods
- Foundations of Risk Management, Machine Learning for Finance,Advanced Interest Rate Curve Models, Deep XVA Analysis

Engineering Degree — **ENSAE Paris-Institut Polytechnique de Paris**
Palaiseau, France — *2020 – 2024*

- Probability, Statistics, Stochastic Processes, Financial Mathematics, Econometrics, Time Series, Machine Learning
- Financial Instruments, Microeconomics, Macroeconomics, Banking and Financial Economics, Portfolio Management, Extreme Value Theory

CPGE MPSI-MP* — **Marcelin Berthelot**
Saint-Maur-Des-Fossés, France — *2018 – 2020*

Professional Experience

- **Quantitative Researcher** — **Mazars**
  Paris, France — *May – November 2024*
  - Writing an actuarial dissertation about Deep Learning Methods in order to calculate different XVAs
  - Study of Differential Learning Method and Deep XVA Solver and comparaison with classical Nested Monte-Carlo
- **Quantitative ALM Analysis** — **Caisse des Dépôts**
  Paris, France — *January – July 2023*
  - Review of the interest rate shock calculation method for the Fonds d'Epargne Capital Requirement
  - Study and calibration of various interest rate models: Vasicek, CIR, Hull White, G2++, Jarrow-Yildirim
  - Study of yield curve reconstruction models: Functional Nelson-Siegel
- **ESG Risk Modeling** — **Cabinet Command Strategy**
  Paris, France — *June – December 2022*
  - Study on the Markowitz Efficient Frontier with ESG constraints for the portfolio
  - Study on the impact of aggregated E, S, and G pillar ratings (Clustering algorithms)
  - Publication of an article on the dispersion of ESG ratings within an equity portfolio (Published here)
  - Study of various financial instruments and their valuation methods for a pricing library implementation
- **Private Mathematics Tutor** — **Ma Petite Ecurie**
  Paris, France — *June 2020 – January 2021*
  - Tutoring students from 8th grade to 12th grade to help them understand their coursework

Projects

- **Deep Solver for PDEs**
  M2MO, France — *May 2024*
  - Studying various methods to solve PDEs including Deep Galerkin Method and Deep BSDE Solver for XVA Calculations
- **Deep Calibration of Interest Rate Model**
  ENSAE Paris, France — *March 2024*
  - Project carried out in PyTorch to calibrate the G2++ Model Using Neural Networks
- **Milstein Scheme for CEV SDEs**
  M2MO, France — *February 2024*
  - Project carried out in Python to study empirically the rate of convergence of some CEV SDEs
- **Applied Statistics Project** — **Qube Research & Technologies**
  Paris, France — *November 2021 – May 2022*
  - Project carried out in Python to predict real-time stock price fluctuations using multiregression methods and penalization methods

Skills

- **Mathematical Finance**: Stochastic Calculus and Diffusion Models, Derivative Product Modeling
- **Tools**: Python, R, Microsoft Office, HTML/CSS, LaTeX
- **Python Modules**: Numpy, Pandas, Matplotlib, Scikit-Learn,PyTorch
- **Advanced Techniques**: Object-Oriented Programming, Git/GitHub
- **Languages**: French (Native), English (C1), Spanish (B2)
- **Interests**: Football, Table Tennis, Road Trips