Bryan DELAMOUR

bryan.delam@gmail.com
https://github.com/bryandel01/
+33 (0)6 11 44 00 57

Education

University Paris Dauphine-PSL — Paris, France
Master 2, Mathematics Research Master's degree –MASEF, Financial Mathematics Major — 2022
Master's thesis: "Deep learning rough volatility and deep calibration of the rough Bergomi model", supervisor Paul Gassiat
Python projects:
- *American, European Options, and Worst-Of Autocallables Pricing, using Monte Carlo and Finite Difference Methods.*
- *Asian, Lookback, and Digital Options Pricing, using: "Multilevel Monte Carlo Path Simulation." Michael B. Giles, Oxford Man Institute of Quantitative Finance. (2008)*
- *Neural Networks Hedging under Rough Bergomi model: "Deep Hedging Under Rough Volatility" Horvath B. Teichmann J. Zuric Z. (2021)*

University Paris Dauphine-PSL — Paris, France
Master 1, Mathematics – Statistics Major — 2020
Master's thesis: "Correlation between toponymy and geography of French municipalities" (Implemented in R), supervisor Robin Ryder
C++ project: Vector, Matrix & Tensor classes implementation

University Paris Dauphine-PSL — Paris, France
Bachelor of Science, Mathematics– Probability Major — 2019
Python project: Double Pendulum Chaos Motion
R project: Random Variables Simulation Methods, Variance Reduction Methods

University of Greenwich — London, United Kingdom
Master of Science, Banking & Finance (Distinction) — 2016
Master's thesis: "Political risk and foreign exchange market: an exploration of the brexit impact on the sterling", supervisor Lianfeng Quan

IPAG Business School — Paris, France
Master 2, Financial Markets — 2015

Waterford Institute of Technology — Waterford, Ireland
Erasmus, Economy — 2014

Research Projects

Algorithmic Trading
Implemented with Python mean reversion strategies following Ernest P. Chan "Algorithmic Trading" — 2022
- *Johansen Test and Cointegrated Augmented Dickey-Fuller Test (CADF) to identify potential assets for cointegration*
- *Automated the data cleaning process and mean reverting/stationary tests (Estimation of Hurst exponent, ADF, Variance ratio test)*

Multilevel Monte Carlo Path Simulation — 2021
Implemented with Python the Multilevel Monte Carlo method and reproduced Michael B. Giles' results
- *Multilevel Monte Carlo improves the classic Monte Carlo method by reducing the computational complexity*
- *For a same level of precision, the multilevel method runs 10 to more than 1000 times faster*
- *Implemented Black-Scholes and Heston models, Milstein and Euler discretization schemes*

Worst-Of Autocallable — 2021
Implemented with Python a 2 assets worst-of autocallable pricer (Eurostoxx50 & CAC40)
- *Each asset has its own coupon value, its own paying and redemption barriers*
- *Used historical correlation, implied volatility, Black-Scholes model*

Deep Hedging Under Rough Volatility — 2021
Produced hedging strategies using Neural Networks and Rough Volatility models
- *Performs as precise as stochastic models' hedging*
- *Simulation of fractional Brownian motion with circulant method: Wood & Chan (1994), Rough Bergomi model implemented*

Deep Calibration Of Rough Stochastic Volatility Models — 2021
Implemented with python, neural network trained to learn the map from implied volatility surfaces to rough Bergomi parameters
- *The model is precise with an average relative error of 1.15%*
- *Hybrid Scheme implemented to generate rough Bergomi paths*

Deep Learning (rough) Volatility — 2021
Implemented with python, neural network trained to learn the map from rough Bergomi parameters to implied volatility surfaces
- *The model is precise with an average relative error of 0.5%*
- *Turbo Charging Monte Carlo implemented to allow faster simulation and more precise implied volatility surfaces*

Skills

Programming : Python (Advanced, Numpy, Pandas, PyTorch), C++ (Basic), LaTeX
Academic: Stochastic Calculus, Monte Carlo Methods, Equity Derivatives, Black Scholes Model, Rough Volatility Model (rBergomi), Statistics, Neural Networks, Algorithmic, Data structures, Hedging, Pricing, Machine Learning, Volatility
Language: French (Mother tongue), English (Fluent), Persan (Intermediate), Spanish (Intermediate)
Esport: Mobile Legends (100 million active players): Luo Yi Champion, 293 World Rank, Top 10 France, 1st Paris