Imad Badda

Graduate Engineering Student, looking for a 6-month internship in Quantitive Finance starting from March 2022

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Education

Engineering School Sup Galilée France - Villetaneuse (93430)

Since September 2019

Applied Mathematics and Scientific Calculus
Example of relevant courses :

- Stochastic Calculus
- Numerical Analysis
- C ++
- Convex Optimisation
- Partial Differential Equations
- Inferential and Descriptive Statistics
- Financial Mathematics

Preparatory Classes Lycée Mistral France - Avignon (84000)

From September 2016 to June 2019

PCSI - PSI (Physics and Engineering Science)
undergraduate, intensive course in mathematics and physics.

Academic and Personal projects

Master's thesis : Creation of long term yield curve

Since November 2021

Master's thesis on the creation of long term yield curve using progressive dynamic utilities and the Ramsey rule.

- modelisation of an incomplete stochastic market
- Simulation of stochastic processes
- Lecture of high level mathematic articles

Personal Project : Options Pricing using Monte-Carlo

October 2021

Pricing of a Call on an Index using Monte-Carlo

- Simulation of stochastic processes (brownian motion, price evolution of an asset)
- Monte-Carlo method and it's confidence interval
- Method of variance reduction by antithetic variate and control variate

Made in Python (numpy for calculus and matplotlib to visualize)

2nd Year Tutored Project

From March 2021 to May 2021

Domain Decomposition for Advection Diffusion PDE :

- theoretical study of the stationnary and unsteady cases
- time space numerical scheme

Made in Freefem++
Writing of a LaTeX report

Computer skills

Python	intermediate (pandas, numpy, scikit-learn)
C++	intermediate
C	intermediate
Matlab/Octave	intermediate
Excel / Powerpoint	intermediate
R	beginner
SQL	beginner
Git	beginner

Analytical Skills

Simulation

- Monte Carlo
- Variance Réduction Methods (antithetic variates, control variates, importance sampling, stratified sampling)

Numerical Analysis

- Finite Difference
- Numerical Integration
- Newton-Raphson Algorithm
- Matrix Decomposition (LU, Cholesky, QR, SVD)
- Eulerian and Milstein Schemes

Machine Learning

- Ordinary Least squares
- Gradient Descent
- Regression (linear, logistic)
- Principal Component Analysis

Languages

French	Native speaker
English	Professional fluency (C1 - TOEIC : 970/990)
Spanish	Notions