Mame Diarra TOURE

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About me

I am currently a PhD student in the department of mathematics and statistics of McGill University. I graduated Magna Cum Laude from a joint program in applied mathematics and computer science at ENSIIE and University of Paris Saclay. I am a fellow of the Jacques Hadamard Mathematic foundation which awarded me the Sophie Germain excellence scholarship for my master in quantitative finance. I am mostly interested in the research field of machine learning and deep learning and their aplication in industry particularly in quantitative finance.

Education

McGill University, Montréal, Canada *2022-2025*

PhD student in the department of Mathematics and Statistics.

University Paris Saclay, Paris, France *2019-2021*

Msc in quantitative finance with high honors (mention Bien/ Magna Cum Laude)(double degree)

• Stochastic calculus , Financial Mathematics , Numerical Finance (Finite Differences, Monte Carlo procedure, PDE approach ...), Financial modelling, Interest rate modelling, Machine Learning, Deep Learning , Stochastic Control, Stochastic analysis, Statistics, markets and financial instruments

ENSIIE (National School of Computer Science for Industry and Business) *2018-2021*

Engineering degree in applied mathematics

• Main courses: Probability, Statistics, Optimisation, Operational Research, Machine Learning, Data analysis, Graphs Theory, Stochastic processes, Stochastic Calculus, Simulations Methods, Numerical Analysis, Financial Markets, Functional analysis, Time series analysis.

University Evry Val d'Essone, Evry, France *2018-2019*

Bsc in Mathematics with high honors (mention Bien/ Magna Cum Laude)(double degree)

Saint Charles High school, Orléans, France *2016-2018*

Preparatory school for national competitive entrance to french engineering schools

Professional experience

Société Générale *November 2021- January 2022 / France*

Quantitative analyst: PD and LGD modeling regarding the Haussmann Project

BNP Paribas Stress Testing Methodologies and Models *May-October 2021/ France*

Quantitative analyst intern: Quantification of the exposure of BNPP to the different clearing houses it belongs to as well as the probability of having a certain portion of its default fund consumed

Laboratory of Mathematics and modelisation of Evry LaMME *2019-Summer / France*

Research internship: Rough volatility, kernel estimation of Volterra processes

Pedagogical Project

2020-2021

- Estimating the Hurst parameter for a fractional brownian motion and study of the lifted heston model in Python
- Combining Neural Network Algorithms and Model Diffusion for CVA Pricing, in partnership with *Natixis*
- Pricing and hedging of a lookback option in the Black & Scholes framework in C++ and VBA
- Study of the SABR model: Calibration and volatility smile and skews in Python
- Handwritten Digit Classifier in Python

2019-2020

- Research project: Option pricing and implied volatility computation using Artificial Neural Networks in Python
- Resolution of Black-Scholes PDE for vanilla option pricing implemented in C++
- Study of breakup model using the Weibull distribution in Python
- Gas sensor array temperature modulation: using supervised learning to select the best sensors for CO measurement in R
- Kaggle competion: New York City taxi trip duration in R

Skills

Programming Languages	Python | C++ | R | C | Scilab | SQL
Environments	Windows | Unix | MacOS
Frameworks & Libraries	Jupyter | Matplotlib | Numpy | Pandas | Scikit-learn | Tensorflow | Ggplot2 | Tidyverse
Languages	***Native:*** French, wolof ***Fluent:*** English (180+ linguaskill, 108/120 TOEFL) ***Beginner:*** German

Achievements

- **Award**: Sophie Germain excellence master scholarship from the Mathematics Foundation Jacques Hadamard (FMJH)
- **Certification**: Machine learning certification on Coursera, credential id CMG7B9Y2DPTN

Hobbies

- ***Cooking:*** Pastries, african meals, ***Reading:*** Novels, Research articles, ***Hair dressing:*** Cornrows, braids