



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 application 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), EVRY, FRANCE

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

JACOB

May 2022/ Montréal

RESEARCH INTERNSHIP: REINFORCEMENT LEARNING FOR AD CAMPAIGN BUDGET PACING, NLP, TOPIC MODELLING

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.

LABORATORY OF MATHEMATICS AND MODELISATION OF EVRY LAMME

2019-Summer / France

RESEARCH INTERNSHIP: ROUGH VOLATILITY, KERNEL ESTIMATION OF VOLTERRA PROCESSES

PEDAGOGICAL PROJECT

- 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
- 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 competition: 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 | Tidiverse

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), Professor Cho's diversity award (Mila)
- **Certification:** Machine learning and Fundamentals of Reinforcement learning

MENTORSHIP AND VOLUNTEERING

- **JP Morgan:** JPMorgan Quantitative Research Mentorship Program 2023
- **Association of Women in Mathematics:** AWM Mentorship program for early career women researchers
- **Volunteering:** Provided mathematics and physics tutoring to high school and junior high school students.

HOBBIES

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