M'HAMED HALATA

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PROFILE

M1 Student in Applied Mathematics (MIGS), specializing in **Machine Learning** and **Stochastic Calculus**. With strong skills in stochastic modeling and programming (**C++**, Python), I am seeking a 3-month internship starting June 2026 in quantitative finance.

EDUCATION

Master 1 in Applied Mathematics (MIGS)   2025 - Present
University of Burgundy, Dijon.
Key courses : Stochastic Calculus, Time Series, Convex Optimization, Statistics, Data Analysis.

Bachelor's Degree in Mathematics   2021 - 2025
University of Burgundy, Dijon.

Bachelor's Degree in Physics   2018 - 2021
University of Rennes 1, Rennes.

TECHNICAL SKILLS & LANGUAGES

Programming	**C++** (STL, OOP), **Python** (NumPy, Pandas, Scikit-learn), SQL, R, MATLAB.
Mathematics	Stochastic Calculus, HMM, Monte Carlo, Optimization, Time Series.
Tools	Git, GitHub, LaTeX, VS Code, Linux.
Languages	**French** (Native), **Arabic** (Native), **English** (C1 - TOEIC : 940/990).

ACADEMIC PROJECTS & RESEARCH

"Stress-Aware" Portfolio Strategy HMM (C++, Python)   6 months
Quantitative research project aiming to immunize a portfolio against market crashes.
— Development *from scratch* of an estimation engine in **C++** (Baum-Welch Viterbi Algorithms).
— Implementation of **Student-t** distributions to capture heavy tails and volatility.
— Backtesting (1985-2023) : Reduction of **Max Drawdown** from -56% to -35% on the S&P 500.
— Performance : Increase of **Sharpe Ratio** from 0.47 to 0.89.
— Validation via **Monte Carlo** Stress Testing (1000 simulations) and VaR/CVaR analysis.

Lasso Regression Coordinate Descent (Python)   2 months
Optimization and Machine Learning.
— Manual algorithmic implementation of coordinate descent.
— Application on the *Ames Housing* dataset : Selection of 12 influential variables out of 82.
— Significant improvement of RMSE compared to standard models.

WORK EXPERIENCE (STUDENT JOBS)

Sales Advisor (20h/week)   May 2021 - September 2025
Primark, Dijon. *Work alongside studies. Supervision of checkout lines and flow management.*

Logistics Associate   Summer 2020
Marché aux Affaires. *Stock management, shelving, and inventory control.*

INTERESTS

Sports : Tennis, Volleyball, Football (Regular practice, competitive spirit).
Cinema : French cinema and 70s movies.
Volunteering : Member then manager of the University of Burgundy Cinema Club board (2021-Present).