Abdoulaye Tangara

Statistician & Economist

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My Digital Portfolio My GitHub

PROFESSIONAL EXPERIENCE

October 2024 – January 2025

Volunteer - Statistician Monitoring Evaluation |NGO ACA Mali

- Design and implementation of a monitoring and evaluation system for the NGO's projects
- Collection and analysis of quantitative and qualitative data relating to project indicators
- Development of a database to monitor the progress of project activities
- Quality assurance of data collected in the field through regular missions

October 2023 – Outstanding

Freelance data analysis consultant | Faculty of Medicine and Odonto-Stomatology of Mali (FMOS) and École Normale Supérieure of Mali

- Design of input masks for collecting medical and educational data using appropriate, flexible tools
- Processing and analysing complex data
- Technical support in drafting scientific documents

October 2023 – November 2024

Intern - Statistician | Agricultural Sector Statistical Planning Unit

- Collection, processing and analysis of data from the Enquête Agricole de Conjoncture
- Development of a dashboard to assess EAC indicators using data from the General Census of Agriculture
- Administrative editing of the statistical yearbook

September 2023 – October 2023

Intern – Data Analyst | Orange Mali (Marketing Department)

- Analysis of customer behavior using statistical data
- Monitoring customer operations
- Coordination of promotional launches (e.g. Promo Sewa)
- Weekly reviews to assess promotion results

June 2023 – August 2023

Intern – Statistician | Economic and Statistical Observatory for Sub-Saharan Africa (AFRISTAT).

- Management and updating of economic and statistical databases for the Super Jupiter portal (official platform).

Personal project : "Click here for further details"

— **Machine learning & Marketing**
Faced with limited marketing budgets, this project relies on data analysis and machine learning to maximize the impact of campaigns. By applying clustering (K-Means), four distinct customer segments are identified based on income and consumption habits. Random Forest modeling predicts responses to marketing campaigns with **89% accuracy**, thanks to variables such as purchase recency and specific spending.
Results include budget optimization, improved conversion rates, and offers tailored to the most receptive segments. The next step is to refine the model and apply it in a real-life context.

— **Bank scoring with machine learnig models**
The aim of this project is to develop a credit scoring model for assessing customer repayment probability using logistic regression and decision trees. The aim is to provide financial institutions with a decision-support tool to minimize default risk and optimize credit granting.
The approach adopted is based on data analysis and processing using Python and specialized libraries (*pandas, NumPy, scikit-learn, imbalanced-learn*). Particular attention is paid to class balancing to improve model robustness.
The results show high accuracy, with an **AUC-ROC above 0.75**, guaranteeing better discrimination between creditworthy and risky customers. An intuitive interface has also been implemented to facilitate the interpretation of results and the integration of predictions into decision-making processes.
Impact : This project illustrates the application of asset management and financial optimization concepts to real data, while integrating advanced technological solutions for dynamic investment monitoring and visualization.

— **Portfolio Optimization using Markowitz Model**
This project aims to optimize an investment portfolio by applying the Markowitz model, a key approach in quantitative finance for maximizing return while minimizing risk. Based on real data from the 40 largest companies in the CAC 40 index, it uses advanced financial analysis and programming techniques. The results obtained show an annual return of 12.92%, volatility of 8.17% and a Sharpe ratio of 1.34, guaranteeing optimized risk management. The selection of diversified assets including Danone, Orange, Engie, TotalEnergies, Michelin, Publicis, Legrand, etc., has optimized the portfolio in the face of market fluctuations.
Impact : This project combines quantitative finance and data science, offering a powerful tool for asset management while integrating techniques for optimizing and automating investment decisions.

— **Churn study and modeling with Machine Learning** This churn modeling project aims to identify customers likely to unsubscribe from a platform, by exploiting advanced Machine Learning techniques. The approach adopted combines exploratory analysis, variable selection and dimension reduction to build a robust predictive model. Results : Identification of the main factors influencing churn, including subscription duration and transaction amount. A predictive model with up to **80% accuracy**, offering invaluable help in anticipating and reducing churn.
Impact : A better understanding of customer behavior and optimization of loyalty strategies.

EDUCATION

2024 – 2026 **Master in Quantitative and Computable Economics** | Faculty of Economics and Management (FSEG), Bamako.
Key competency : *Training in advanced econometric analysis, economic modeling and quantitative decision-making tools.*

2021 – 2023 **University Diploma of Technology in Statistics and Data Processing** | Center for Statistical Training and Development (CFP-Stat), Bamako
Key competency : *Training in data analysis, statistical modeling and the use of specialized software.*

2017 – 2020 **Bachelor's degree in economics and financial engineering** | Faculty of Economics and Management (FSEG), Bamako.
Key competency : *specialization in applied economics, financial management, investment optimization and project management and analysis*

SKILLS

Analysis & modeling	Data collection, processing and analysis (PCA, etc.); econometric and machine learning modeling techniques
Programming language	Python language, R language (initiation), SPSS LANGUAGE, LaTeX, …
Langue	French, English (Writing et Speaking.)
Project management	Competence in planning, executing and closing projects, while ensuring compliance with deadlines, budgets and quality objectives.
Project monitoring and evaluation	Ability to design and implement monitoring and evaluation systems to measure the effectiveness of projects and programs, using performance indicators and data analysis methods.

TECHNICAL CERTIFICATIONS

2024 – 2025 **Data Analytics Bootcamp| LINK**

2023 – 2024 **Data science : Machine Learning with Python | LINK**

SQL Language with PostgreSQL | LINK

2022 – 2023 **Data Analysis with Python | LINK**