Merveille Christamour Akouègnon CODJO

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Permis B

Third-year undergraduate student in Computer Science with specialization in Artificial Intelligence at IFRI, University of Abomey-Calavi.I work on applying AI and machine learning techniques to complex data analysis, particularly in biological and scientific domains.My research interests span bioinformatics and data analysis, including the use of genomic and biomedical data for predictive modeling and computational exploration.

Education

Bachelor of Science in Artificial Intelligence *Nov 2023 – Present*
Institut de Formation et de Recherche en Informatique (IFRI), Université d'Abomey-Calavi, Benin

Baccalauréat Série D (Scientific Track) *2021*
Complexe Scolaire Privé "Les Érudits", Benin

Experience

Data Science Intern *July 2025 – Aug 2025*
Locapay, Benin

- Analyzed real estate data from internal company operations to predict housing prices
- Investigated impact of property characteristics (surface area, type, amenities) and location on pricing
- Conducted comprehensive data preparation: cleaning, handling missing values, and feature engineering
- Developed predictive models for housing prices using machine learning algorithms (Linear Regression, Random Forest, XGBoost)
- Created content for social media and marketing materials to communicate data insights to stakeholders
- Interpreted results for business stakeholders and provided actionable insights
- **Skills:** Data Analysis, Machine Learning, Predictive Modeling, Spatial Analysis, Content Creation, Python (Pandas, Scikit-learn)

Projects

Petroleum Distribution Tour Optimization (VRP) [GitHub]
Academic Project – Artificial Intelligence Degree

- Modeled and solved a multi-depot Vehicle Routing Problem for gasoline and diesel distribution
- Addressed real-world industrial constraints: heterogeneous fleet, single-product tours, variable capacities, limited depot stocks
- Formulated the problem as Mixed-Integer Linear Programming (MILP) and implemented exact solution using PuLP + CBC solver
- Designed and implemented advanced metaheuristics: Simulated Annealing (SA)

Chronic Kidney Disease (CKD) Analysis & Prediction [GitHub]
Healthcare Data Analysis & Machine Learning Project

- Analyzed clinical and biological data from 400 patients to predict the presence of chronic kidney disease (CKD)
- Conducted exploratory data analysis to compare CKD vs non-CKD patient profiles

- Identified key diagnostic factors
- Built a predictive modeling pipeline for CKD detection based on clinical features
- Interpreted results using medical literature to ensure clinical relevance
- **Technologies:** Python / R, Data Cleaning, Exploratory Data Analysis, Statistical Analysis, Machine Learning

Extracurricular Activities

AI Club – IFRI *2024*

- Active member participating in AI workshops, coding challenges, and collaborative projects
- Contributed to knowledge-sharing sessions on machine learning and optimization fundamentals

English Club – IFRI & WICSI Girls *2024 – Present*

- Member of IFRI English Club, enhancing technical English communication skills
- Active participant in WICSI Girls (Women in Computer Science at IFRI) promoting diversity in technology

Piano Learning *Ongoing*

- Learning to play piano

Pastoral Studies *Ongoing*

- Pursuing pastoral training to develop spiritual leadership and community support skills

Hackathons & Conferences

- **IndabaX Benin 2025:** Participated in hands-on ML workshops and networking events focused on AI research and innovation in Africa

Technical Skills

Programming Languages: Python , R , HTML/CSS , SQL , JavaScript

AI & Data Science: Machine Learning (Scikit-learn), Deep Learning (TensorFlow/Keras basics), Data Analysis (Pandas, NumPy), Data Visualization (Matplotlib, Seaborn, Plotly), Statistical Modeling, Operations Research, Optimization (PuLP, Metaheuristics)

Tools & Platforms: Git/GitHub, Jupyter Notebook, VS Code, Google Colab, Excel , R Studio,Power Point

Soft Skills: Problem-solving, teamwork, communication, adaptability, continuous learning, analytical thinking, content creation

Certifications & Online Learning

- **Python for Data Science** – Coursera

Languages

French: Native
English: Currently learning **Spanish:** Currently learning

Research Interests & Hobbies

- **Bioinformatics:** Passionate about DNA and protein analysis
- Technology trends in AI and their applications to solving African challenges
- Participating in Kaggle competitions and online coding challenges
- Reading scientific articles in computer science and biology
- **Volunteer work & Child advocacy:** Concerned about children affected by polygamy or orphaned, particularly those lacking access to adequate education

- Traveling and exploring new cultures