

KAN MARC-EPHREM KOFFI

Founder & CTO, Fvundi · AI/ML Engineer · PhD Applicant in AI Safety & Alignment

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RESEARCH INTEREST

M2 Thesis (in progress): “Design of an MLOps Pipeline for a Contextual Credit Scoring AI Based on Retrieval-Augmented Generation (RAG) for Emerging Economies.” This work designs and implements a production-grade hybrid ML-RAG pipeline: XGBoost predicts creditworthiness from Mobile Money features; a RAG system (LlamaIndex + Cohere + pgvector + Claude) generates grounded natural-language explanations via SHAP attribution. During implementation I empirically identified **explanation faithfulness failures** — the RAG layer produces systematically inconsistent explanations for identical ML predictions across demographic groups, independent of model accuracy.

PhD Research Agenda: “Constitutional Oversight of Hybrid ML-RAG Credit Scoring Systems: Scalable Governance for Safe and Fair Financial Inclusion in Emerging Economies.” Building on the M2 empirical finding, my PhD proposal formalizes faithfulness failures via four metrics (FCR, FRC, DCS, HR) and proposes **Constitutional Oversight**: a three-layer governance framework combining a machine-readable Financial Constitution, an AI Arbiter for Scalable Oversight at transaction speed, and Human-in-the-Loop control triggered selectively for constitutional violations.

EDUCATION

M2 – Informatique de Gestion · AI & Deep Learning

2021 – 2026

HEC Abidjan · Abidjan, Cote d'Ivoire

- ▷ Bachelor's degree with *First-Class Honours* (17/20, top distinction) · Major: Artificial Intelligence & Deep Learning
- ▷ **M2 Thesis:** “Design of an MLOps Pipeline for a Contextual Credit Scoring AI Based on Retrieval-Augmented Generation (RAG) for Emerging Economies” — hybrid XGBoost + LlamaIndex/Claude architecture; production MLOps pipeline; empirical discovery of explanation faithfulness failures.
- ▷ **Research extension:** the empirical findings of this thesis directly motivate an independent research contribution — “Constitutional Oversight of Hybrid ML-RAG Credit Scoring Systems” — published as a preprint on Zenodo (May 2026) and forming the basis of my PhD research agenda.

Aspire Leaders Program · Engineering Lead

2025 – 2026

Aspire Institute (Harvard-affiliated) · Remote

- ▷ Led a 5-engineer international team building an AI opportunity engine integrating predictive models and complex financial flows.

RESEARCH & KEY PROJECTS

Fvundi – AI Credit Scoring Platform for West Africa

2026 – Present

Founder & CTO · Abidjan, CI

- ▷ Designed a hybrid ML-RAG architecture: **XGBoost** scores creditworthiness from Mobile Money data (Orange Money, Wave, MTN); **LlamaIndex** + **Cohere** + **Claude** generates SHAP-grounded explanations — strict separation between prediction (ML) and explanation (RAG).
- ▷ **Core safety finding:** empirically identified explanation faithfulness failures — identical ML scores receive systematically different explanation quality across demographic profiles. Formalized via: FCR, FRC, DCS, HR metrics.
- ▷ Proposed **Constitutional Oversight**: Financial Constitution + AI Arbiter (Scalable Oversight) + Human-in-the-Loop (~3% escalation rate). Satisfies BCEAO accountability requirements by design.
- ▷ MLOps pipeline: synthetic data calibrated on BCEAO/UEMOA statistics, XGBoost + Isolation Forest, Tree-SHAP, KL-divergence drift detection, pgvector, NestJS + FastAPI.
- ▷ Targeting 350M+ unbanked people in UEMOA (8 countries). Applied to **Visa Africa Fintech Accelerator** and **a16z Speedrun 2026**.

Blockchain Payment System on Solana

2025

Final Year Engineering Project – HEC Abidjan ·

- ▷ Deployed a USDC payment app on Solana with biometric authentication and secure multi-wallet management.

PROFESSIONAL EXPERIENCE

Chief Technology OfficerFeb 2026 – Present

Immo Plus L'App (Fundraising) · Abidjan, CI

- Pioneered the first Agentic RAG engine deployed to 20,000+ users in the region, architecting a proprietary AI pipeline (LlamaIndex, Qdrant, Claude) that delivers sub-400ms conversational property matchmaking.
- Led full-stack engineering of a dual-platform ecosystem from zero to **20,000+ organic downloads in 5 months**, utilizing a resilient offline-tolerant architecture (Flutter, NestJS) optimized for emerging market connectivity.
- Engineered a secure B2B Digital Vault and Analytics suite for **800+ real-estate professionals**, implementing encrypted document storage and real-time portfolio tracking to replace legacy Excel-based workflows.

Chief Technology OfficerSep 2025 – Jan 2026

Style Pass – Fashionomics Africa / African Development Bank · Abidjan, CI

- Selected for incubation by the African Development Bank (AfDB)** under the *Fashionomics Africa* programme — one of the flagship AfDB initiatives supporting tech-driven fashion entrepreneurship in Africa.
- Designed the *Style Pass Code*: tamper-proof digital identity for luxury assets via **VeChain Blockchain** + NFC; led NFC/Web3/mobile interoperability.

Chief Technology OfficerJun – Sep 2025

Naturalink (Fundraising) · Remote

- Selected for incubation by Orange** under the *Digi Green & Agri* programme — Orange’s regional accelerator for digital solutions in sustainable agriculture.
- Defined tech vision for a Blockchain-certified agricultural supply chain (IoT/NFC + decentralised ledgers); Cloud architecture supporting a **32M FCFA pre-seed raise**.

Chief Technology OfficerSep 2024 – May 2025

Ndaya – Social E-commerce · Remote

- Migrated to microservices (OPEX –65%); automated CI/CD for Web + iOS; built video recommendation engine (Next.js 15 / NestJS).

PUBLICATIONS & PREPRINTS

Koffi, K. M.-E. (2026). *Constitutional Oversight of Hybrid ML-RAG Credit Scoring Systems: Scalable Governance for Safe and Fair Financial Inclusion in Emerging Economies*. Preprint, Zenodo, May 2026. — *Independent research contribution extending the empirical findings of the M2 thesis and forming the foundation of the PhD research agenda.* [DOI — link to be updated]

TECHNICAL SKILLS

AI Safety	Explanation Faithfulness · Constitutional AI · Scalable Oversight · Human-in-the-Loop · Fairness Auditing · SHAP / Interpretability
AI / ML	Python · XGBoost · scikit-learn · SHAP · PyTorch · LlamaIndex · RAG · LLM (Claude, Cohere) · pgvector · Qdrant
MLOps	MLflow · Docker · GitHub Actions · Drift Detection · Synthetic Data · FastAPI
Backend	NestJS · Node.js · PostgreSQL · Redis · TypeORM · REST API
Frontend / Mobile	Next.js 15 · Flutter · Swift (iOS)
Blockchain	Solana · VeChain · USDC · NFC / IoT · Web3
Cloud / Infra	AWS · GCP · Microservices · High-Availability
Languages	French (native) · English (professional)