

# Moffat Kagiri Ngugi

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## Education

**University of East London** — *London, UK*  
**Master of Science in Data Science** — In Progress

**Daystar University** — *Nairobi, KE*  
**Bachelor of Science in Actuarial Science** — 2021

## Experience

**Liberty & Heritage Insurance** — **Nairobi, KE**  
*Actuarial Graduate Trainee* — April 2025 – Present

- Conduct lapse, portfolio, and experience analysis to support risk monitoring, underwriting review, and pricing discussions across general and life businesses
- Developed a structured lapse analysis reporting framework for the Risk & Compliance function, simplifying the monthly risk reporting cycle and reducing reliance on fragmented Excel packs
- Support actuarial reporting and analysis in line with internal risk governance and regulatory reporting requirements across underwriting, finance, and compliance functions
- Support portfolio mix and movement analysis in collaboration with the Investments and Finance teams, contributing to improved visibility over asset and liability dynamics
- Apply claims experience metrics and loss ratio analysis to inform underwriting decisions and renewal reviews
- Work directly with underwriters, actuaries, business development, and finance managers to translate actuarial insights into operational and commercial decision-making
- Contribute to public sector tender preparation through experience analysis, technical documentation, compliance review, and internal stakeholder coordination

**KCB Bank Kenya** — **Nanyuki, KE**  
*Personal Banker* — September 2022 – April 2025

- Operated under a performance-based contract with compensation tied to disbursed loans, deposit retention, active transactional accounts, and digital channel usage
- Analysed loan progress and customer transaction reports to identify high-performing individuals and schemes, supporting targeted loan origination and portfolio growth
- Drove adoption of mobile and digital banking channels across transactional and current accounts, supporting channel migration and reducing in-branch transaction volumes
- Designed and executed monthly SMS reactivation campaigns targeting dormant accounts, improving account activity, customer persistence, and fee-based income
- Maintained consistently high productivity across monthly performance cycles, with digital banking connections accounting for a significant share of individual output

## KCB Investment Bank — Nairobi, KE

### *Investment Banking Operations Training (Secondment)*

- Completed structured exposure to investment banking operations, including securities processing, reconciliations, settlements, and client reporting
- Supported delivery of capital markets products to retail and SME clients through the branch network, including equity brokerage, Treasury bills and bonds
- Gained working understanding of money market fund operations, statement processing, and investment servicing workflows
- Strengthened practical knowledge of regulated financial instruments and end-to-end investment product lifecycles

## Projects

### Mortality Investigation Project

#### *Actuarial Science / R*

- Conducted an end-to-end mortality investigation using policyholder-level data to estimate crude and graduated mortality rates
- Calculated central exposed-to-risk using both **exact individual exposure** and **census approximation** methods, enabling comparison of methodological impacts
- Performed actual vs expected mortality analysis and estimated force of mortality by age
- Implemented time-aware age calculations (last birthday convention) with exact date arithmetic and leap-year handling
- Generated diagnostic outputs to validate exposure calculations and mortality assumptions

*Tools:* R (tidyverse, lubridate, demography)

*References:* Bowers et al. — *Actuarial Mathematics*

### Medical Providers Panel – Spatial Coverage Analysis

#### *Health Analytics / Python & Geospatial Analysis*

- Designed a spatial analytics pipeline to clean, geocode, and analyze a national medical providers panel in Kenya
- Implemented hierarchical geocoding logic with explicit confidence tiers (street-level, town centroid, failed) and data quality diagnostics
- Generated county-level provider summaries and integrated modeled population data to compute **provider-to-population coverage ratios**
- Automated population extraction using raster-based zonal statistics and administrative boundary normalization
- Produced reproducible outputs including interactive maps, structured summaries, and coverage metrics for reporting and planning

*Tools:* Python (pandas, geopandas, rasterio, folium), OpenStreetMap (Nominatim), WorldPop population data

## Fedha — Personal and SME Finance Tracker (Ongoing)

### *Applied Analytics & Product Development*

- Developing an SME-focused financial insights platform providing tools for tax estimation, invoicing, and compliance support
- Translating small business financial data into structured summaries to improve cashflow visibility and decision-making
- Designing data models and reporting logic aligned with regulatory and compliance requirements for SMEs
- Iteratively refining backend architecture with a focus on reliability, auditability, and future scalability

## Certifications & Professional Development

### Professional Certifications

- **Financial Modeling & Valuation Analyst (FMVA)** — Corporate Finance Institute (CFI)

### Professional Standing

- **Affiliate Member**, Society of Actuaries (SOA)
- **Working toward Associate of the Society of Actuaries (ASA) designation**

### Additional Training

- **Agile Principles & Methodologies Certification** — KCB Bank Kenya

## Technical Skills

**Actuarial & Analytical:** Risk Analysis & Reporting, Statistical Modeling, Pricing Analysis, Loss Ratio Analysis, Predictive Modeling, Data Visualization

**Languages:** Python, C/C++, SQL (Postgres), JavaScript, HTML/CSS, R, Java

**Frameworks:** React, Flutter, Node.js, Flask, Material-UI, FastAPI, Django

**Developer Tools:** Git, Jupyter Notebooks, Docker, GCP, VS Code, PyCharm, IntelliJ, Eclipse

**Libraries:** pandas, NumPy, Matplotlib, Scikit-learn, TensorFlow, OpenCV, Tesseract OCR

**Databases:** PostgreSQL, SQLite, Firebase, Firestore

**Other Tools:** Excel (Advanced), Power BI, Tableau, LaTeX