Samuel MATIA KANGONI

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EDUCATION

University of Kinshasa   **Aug 2021 – Sep 2025**
Polytechnic Faculty, Bachelor in Electrical and Computer Engineering   *Graduated **top of the class with 79%***
– Bachelor Thesis: "Enhancing Sentiment-Driven Recommender Systems With LLM-Based Feature Engineering: A Case Study in Drug Review Analysis", published in IEEE Access, graded **20/20**

Institut Cardinal Malula – Kinshasa   **Completed in 2020**
Secondary School, Biochemistry Section   *Ranked **1st school-wide (Valedictorian)**, with a score of **79%** at the National Exam*

PUBLICATIONS

Journals
– **Samuel Matia Kangoni**, Obed Tshimanga Tshipata, Pierre Sedi Nzakuna, Vincenzo Paciello, Jean Gilbert Mbula Mboma, Jean Robert Makulo, Kyandoghere Kyamakya.
Enhancing Sentiment-driven Recommender Systems with LLM-Based Feature Engineering: A Case Study in Drug Review Analysis.
IEEE Access, 2025. DOI: 10.1109/ACCESS.2025.3590326

Book Chapters
– **Samuel Matia Kangoni**.
Machine Learning in Malware Analysis.
Book chapter **submitted** for publication in **Mastering Malware Development and Analysis: A Comprehensive Guide to Hybrid Malware Analysis and Virtual Sandboxing**,
Edited by Dr. Bishwajeet Pandey, Dr. Deepak Bhaskar Acharya, and Ms. Divya B., **Apple Academic Press**, 2025.

Conferences
– **Samuel Matia Kangoni**, Obed Tshimanga Tshipata, Jean-Gilbert Mbula Mboma, Pierre Sedi Nzakuna, Vincenzo Paciello, Vianney Witesyavwirwa Kambale, Kyandoghere Kyamakya.
Structural Preservation in Efficient Pharmacovigilance Summarization: A Causal Graph-Based Evaluation Framework.
Submitted to **IEEE AFRICON**, 2025. **(Under Review)**

– Mugisha Muhire Jean-Pierre, Kyandoghere Kyamakya, Christian Kutabuna Kubakisa, Isaac Lukusa Kayembe, Divin Kayeye Kabeya, **Samuel Matia Kangoni**, Witesyavwirwa Vianney Kambale, Hima Deepthi Vankayalapati, Selain Kasereka Kabunga.
Toward Neuro-Symbolic and Reservoir-Inspired Medical Imaging: A BD-CeNN Autoencoder with ASP Rule Mining for Robust and Explainable Interpretation of Grayscale and Color Images.
Submitted to **IEEE AFRICON**, 2025. **(Under Review)**

SKILLS

– **Concepts** : Machine Learning, Deep Learning, Natural Language Processing, Recommender Systems, Computer Vision, Reinforcement Learning, Physics-Informed Neural Networks, Web Development.
– **Frameworks** : PyTorch, TensorFlow, Numpy, LangChain, HuggingFace, Scikit-learn, OpenCV, ZenML, Pandas, Matplotlib, Streamlit, Django.
– **Programming & Development** : Python, JavaScript, MATLAB, Git, Linux, Docker, HTML & CSS.
– **Research** : Research & Problem-Solving Skills, LaTeX.
– **Cloud** : AWS (basics), GCP (basics)

EXPERIENCE

EAZYTraining / EASYCONSULTING (remote – France)   **Aug 2025 – Present**
Freelance AI Trainer
– Designed and delivered online courses on Artificial Intelligence and Data Science, focusing on practical applications and hands-on projects.

– Guided learners through real-world case studies, coding sessions, and model deployment workflows, ensuring knowledge transfer and skill acquisition.
– Developed tailored training materials and structured programs on ML, DL, and Generative AI.

CongoExcelTechnologies   **Jul 2024 – Mar 2025**
AI engineer

– Designed and implemented end-to-end Generative AI solutions using Retrieval-Augmented Generation (RAG), integrating vector databases and web scraping pipelines to build custom knowledge systems.
– Developed robust connectors and automation scripts to integrate AI solutions with third-party APIs and internal databases, enabling real-time data retrieval and processing.
– Continuously evaluated and benchmarked new AI models, tools, and frameworks (LLMs, embeddings, fine-tuning strategies), integrating the most effective ones to enhance solution performance and relevance.

PathOr Platforms (remote – India)   **Sep 2024 – Nov 2024**
AI engineer intern

– Built and deployed task-specific LLM agents for shopping assistance, data analysis, and workflow automation, using modular programming and prompt chaining strategies.
– Scraped and structured large-scale datasets from e-commerce platforms and analytics dashboards to feed agent decision-making processes.
– Designed and fine-tuned custom language models and embedding pipelines to align agent behavior with specific user intents and domain knowledge.

Huawei (remote – Morocco)   **Jul 2024 – Jul 2024**
Seeds for the future intern

– Initiated and led a Tech4Good project for the DRC team, proposing innovative technologies to support global sustainability and digital inclusion efforts.
– Gained foundational knowledge in ICT infrastructure, including 5G networks, cloud computing, and digital power systems, through training sessions and hands-on activities.

Mentorness (remote – India)   **May 2024 – Jun 2024**
AI/Machine learning intern

– Developed a YouTube Script Generator that transforms multiple video transcripts into cohesive scripts using the YouTube Transcript API, Google Gemini API, Langchain, and Streamlit for a seamless user interface.
– Designed and deployed machine learning models for time series forecasting and multi-class classification, focusing on real-world datasets and model interpretability.
– Built a voice-enabled chatbot by integrating HuggingFace transformers with OpenAI Whisper API, enabling real-time speech-to-text and conversational AI interactions.

IA Flex Start (remote – France)   **Dec 2023 – Mar 2024**
AI consultant

– Integrated LLMs into production-ready applications via custom APIs, enabling seamless interaction with external tools.
– Performed end-to-end data preprocessing, including data cleaning, integration, and transformation.

Orange (Summer challenge 2023)   **Jul 2023 – Oct 2023**
AI/Machine Learning Intern

– Developed the Utulivu system for autism screening, combining a surveillance robot, smart bracelet, and mobile app to enable two-phase behavioral diagnosis using AI.
– Deployed an object detection model on Raspberry Pi using TensorFlow for real-time visual analysis.
– Built a hybrid recommendation system integrating collaborative and content-based filtering for personalized media content and trained and validated a high-accuracy machine learning model for early autism detection.

LEADERSHIP AND COMMUNITY ENGAGEMENT

Zindi Africa   **Oct 2024 – Sept 2025**
Country ambassador (Democratic Republic of Congo)

– Built and led a dynamic community of 200+ members to promote data science and AI in the DRC, actively preparing future leaders to sustain Zindi's presence with Country and University Ambassadors.
– Organized workshops, hackathons, and competitions to engage local talent, collaborated with organizations on social-impact projects, and hosted events to showcase Zindi's resources and opportunities.

Open Science Community Cohere   **Aug 2025 – Present**
Member

– Engaged in promoting open science practices in AI and NLP, sharing resources and collaborating with international peers.

Polytechnic Faculty, University of Kinshasa   Jul 2025 – Jul 2026

Project Coordinator and Informatic Lab Manager

– Managed the Faculty's Informatic lab and server infrastructure, partnering with faculty and external stakeholders on projects.
– Mentored and coordinated student research initiatives, fostering innovation in AI and computer science.

Google Developer Students Club   Jul 2023 – Jul 2024

Co-lead of the University of kinshasa's chapter

– Co-led the University of Kinshasa chapter, coordinating technical events and workshops.
– Mentored students to develop their skills in software development and AI.
– Facilitated collaboration between members and external partners to boost community engagement.

IngenieuxSud   Dec 2023 – Jul 2024

Challenge of feeding goats with silage (FARRE Farm/Kinshasa Kimwenza) in collaboration with students from UC Louvain

– Evaluated silage feasibility for goat feeding at FARRE Farm, estimated the quantity needed for the herd's nutritional needs, and assessed goats' acceptance of different silage samples.

AWARDS AND DISTINCTIONS

Hackathon TechPoly 2024

First prize

– Mat.IA (Multilingual Augmented Tutor.IA) – Solo project: Developed a real-time web application for language learning, integrating object detection (computer vision), LLM-based dialogue (NLP), and text-to-speech (audio processing).

Orange Summer Challenge 2023

Second prize for the Utulivu Project. See Experience section

LANGUAGES

– **French**
– **English**
– **Kikongo**
– **Lingala**