Samuel MATIA KANGONI

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Education

University of Kinshasa — **Aug 2021 – Jul 2025**
Polytechnic Faculty, Bachelor in Electrical and Computer Engineering

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

- **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
- **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.

Skills

- **Concepts** : Machine Learning, Deep Learning, Natural Language Processing, Recommender Systems, Differentiable Programming, 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, Java, MATLAB, Git, Docker, HTML & CSS.
- **Research** : Research & Problem-Solving Skills, LaTeX.
- **Cloud** : AWS (basics), GCP (basics)

Experience

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.
- 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.

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 silage quantity needed for the goat herd's nutritional needs.
- Assessed goats' acceptance of different silage samples.

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.

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