

# Samuel MATIA KANGONI

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## Education

### University of Kinshasa

Polytechnic Faculty, Bachelor in Electrical and Computer Engineering

Aug 2021 – Jul 2025

### Institut Cardinal Malula – Kinshasa

Secondary School, Biochemistry Section

Completed in 2020  
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

AI engineer

Jul 2024 – Mar 2025

- 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)

AI engineer intern

Sep 2024 – Nov 2024

- 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)

Seeds for the future intern

Jul 2024 – Jul 2024

- 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)

AI/Machine learning intern

May 2024 – Jun 2024

- 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**

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#### **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**

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#### **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**

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