

# Damour Nsanzimfura

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I am a lead data governance and AI Expert at Cenfri, with 10 years experience in the fintech and international development sectors. My career includes roles at Cenfri, Wekraft Ltd, and CyLab Africa, where I developed and improved data quality and governance systems, designed analytical solutions, and created high accuracy machine learning models. I hold specialized certifications in AWS Cloud Architecture and Generative AI and have completed advanced coursework in AI System Design and Project Management. Currently, I serve as a Data Science Fellow at Cenfri, focusing on developing data governance standards and guidelines for the Rwanda Ministry of Infrastructure..

## Education

### MSc in Engineering AI

Carnegie Mellon University

May 2022

- **Relevant Coursework:** Product Management, Applied Machine Learning, Big data, Cloud Computing, AI Systems Design

### BSc in Robotics

Vladimir State University

2017 – 2022

- **Relevant Coursework:** Data Structures, C++, lisp, control systems
- Graduated with First Class Honors (3.7/4.0 GPA)

## Work Experience

### Cenfri

Data Science Fellow

Kigali, Rwanda

July 2025 – Present

- Spearheaded data governance initiatives as a Technical Adviser for the Rwanda Ministry of Infrastructure, boosting data accuracy for national projects by 35%.
- Facilitated the standardization of data elements across multi-departmental systems to ensure consistency in infrastructure reporting.
- Reduced data-related risks by 50 % by enforcing stricter data protection policies and privacy-preserving RAG frameworks.
- **Skills:** Data governance Policy, compliance

### Wekraft Ltd

AI Engineer

Kigali, Rwanda

July 2024 – Present

- Architected, planned, and steered the end-to-end delivery of **SkillSeed**, an AI-powered learning platform functioning as the in-house Technical Advisor from scoping to go-live to ensure alignment with company's goals.
- Supported architecture and planning decisions by implementing a resilient microservices architecture (NestJS, MongoDB), critical for future system expansion, scalability, and integration.
- Liaised with Partner and external stakeholders (private schools, MINEDUC) to refine the solution and define clear user requirements, leveraging Agile/Scrum best practices for effective communication and execution (e.g., sprint planning).
- **Skills:** e-payment(flutterwave), Scrum/Agile, NestJS, MongoDB, React, OpenAI API, Docker, AWS.

### Upanzi Network, CyLab Africa

Machine Learning Engineer

Kigali, Rwanda

July 2023 – Dec 2024

- Led the **HumekaFL** multi-institution research project on neonatal asphyxia detection using federated learning, collaborating with patterned hospitals across Africa.
- Designed and implemented an end-to-end data pipeline for processing and augmenting the Baby Chillanto Infant Cry database (1,049 healthy, 879 deaf, and 340 asphyxiated infant recordings). Leveraged Apache Spark and Python for scalable data pre-processing, including noise reduction and feature extraction (MFCCs, spectral centroid, spectral rolloff).
- Utilized PyTorch and ResNet50 to build a CNN classifier, achieving 96% accuracy. Deployed the model using AWS SageMaker, ensuring scalability and reproducibility.
- **Skills:** PyTorch, TensorFlow, Flask, Docker, Secure Aggregation.

### UpWork, KreditPlus

Full Stack Developer

Jakarta, Indonesia

Jan 2022 – Apr 2023

- Led the development and enhancement of Kreditplus Mobile app, focusing on payment features, payment by agreement, and PPOB.

- Successfully launched a recurring payment feature, increasing on-time installment payments by 15%.
- Initiated and managed the development of deeplink marketing, increasing user app engagement duration by 13%.
- Spearheaded the centralization of CMS, responsible for the end-to-end process of development.
- **Skills:** Data Analysis, AI Education Policy, Curriculum Design, Stakeholder Engagement.

## Skills

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- **Programming Languages:** Python, JavaScript (Node.js, TypeScript), Go (familiar), SQL.
- **Data Governance:** Enterprise Data Strategy, Data Quality Management, Metadata Management, Information Asset Management, Data Privacy and Security Standards (GDPR/RAG), Data Governance Platforms (AWS Glue, Collibra-style frameworks).
- **Data Analysis Tools:** SQL, Python, R, SAS/SPSS (equivalent to Scipy/Scikit-Learn), Apache Spark, PyTorch, Tableau/PowerBI.
- **Cloud & DevOps:** AWS (Lambda, S3, EC2), Docker, CI/CD with GitHub Actions, Heroku deployment.

## Projects

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### SkillSeed

[github.com/nsarob/](https://github.com/nsarob/)

- Developed an **AI-powered platform** that helps learners explore their passions and build future-ready skills through personalized learning paths.
- Implemented recommendation logic powered by OpenAI APIs and a microservices backend using NestJS and MongoDB.
- **Skills:** React, NestJS, MongoDB, OpenAI API, AWS.

### Agentic Farm Monitoring System

[github.com/nsarob/](https://github.com/nsarob/)

- Built an **agentic farm management tool** enabling non-technical users to control and query IoT-based SCADA systems through natural language.
- Achieved **90–100% task completion accuracy** across multiple farm operations, improving reliability and operational efficiency.
- **Skills:** Python, FastAPI, LangChain, MQTT, Edge AI.

### Edge LLM Framework for Secure EHR Interaction

[github.com/nsarob/pat-ai](https://github.com/nsarob/pat-ai)

- Developed a **privacy-preserving RAG framework** for local, secure interactions with Electronic Health Records (EHR).
- Achieved high alignment between RAG outputs and ground-truth responses, demonstrating strong precision, recall, and F1-scores.
- **Skills:** LangChain, OpenAI, Docker, RAG, Secure Local Inference.

## Achievements & Awards

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- AWS All Builders Welcome Grant Recipient, 2025 Las Vegas
- 8 + AWS Cloud Badges on Credly (Cloud Practitioner, Architect, AI/ML, ...)
- First Class Honorary Award — Vladimir State University
- 2nd Runner-Up — Rwanda CyberStars CTF, 2020