

## Jean de Dieu MURERA GISA

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Kigali City, Gasabo District, Kimironko Sector, Bibare Cell, Umwezi Village.



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<https://www.linkedin.com/in/murera-gisa-7009aa155>



[https://mgisa.shinyapps.io/Air Quality Monitoring Tool/](https://mgisa.shinyapps.io/Air_Quality_Monitoring_Tool/)



<https://www.rpubs.com/mgisa>

| <https://www.github.com/mgisa>

| <http://bit.ly/Webmgisa>

<https://mgisa.netlify.app>

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### PROFESSIONAL SUMMARY

Proactive, highly motivated, and skilled ML and data scientist with three years of experience in the data science area. Successfully accomplished Natural Language Processing, Text Mining, and Sentiment Analytics project indicated by the deployed tool for public sentiment monitoring and published research paper at AERC. Eager and self-motivated to learn more and get experience in Natural Language Processing, Machine Learning, and Data Science and their applications in economic systems. Experienced in data-driven research and in the implementation of funded data-related projects. I am interested in the application of data science techniques, Machine Learning, and Deep Learning technologies to solve environmental, health, social, and economic challenges. My aim is to relevantly understand and apply Data Science technological skills in order to accurately support the evidence-based socio-economic policies envisage to transform human life.

### PROFESSIONAL EXPERIENCE

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**National Bank of Rwanda, BNR**

**Aug. 2020 – Present**

**Data Scientist**

#### Key Responsibilities

- Developing new economic indicators using big data sources
- Participating in artificial intelligence and big data analytics projects
- Leveraging data science approaches to identify the insightful information hidden from different types of data in the National Bank of Rwanda.
- Designing and developing different visual dashboards and data-driven tools for economic monitoring in Rwanda.

#### Key accomplishments

- Developed and deployed a robust public perception and sentiments monitoring tool to regularly monitor the public perception and sentiments towards the National Bank of Rwanda's communication.
- Developed an Economic Monitoring Dashboard using data from the financial sector and surveys for policymakers to monitor key economic variables in real-time.
- Built an automated web scraper for economic news, social media, and real estate to develop the underlying index to monitor macroeconomic performance.
- Developed a social media sentiment index to be correlated with other macroeconomic indicators to regularly monitor the economic performance in Rwanda.
- Established and maintained an effective process for validating and updating predictive models

**Rwanda Environment Management Authority, REMA****June 2019 – Mar.2020****Data Scientist on Air Quality and Climate Change Monitoring Project****Key accomplishments**

- Provided mathematical and statistical expertise to research and analysis of air quality data to drive evidence-based decision-making.
- Provided a regular visual time report and dashboard on air quality status in Kigali City.
- Develop automated air quality data analysis R script to regularly analyze and develop a visual report and dashboard on air quality status in Rwanda.
- Provided a report on Aerosol Source Apportionment in Kigali City through the usage of the Statistical Machine Learning Techniques.
- Trained staff on the use of R statistical software for Air Quality Data Analysis.

**Bank of Africa PLC****May 2018– Dec.2018****Business Intelligence****Key accomplishments**

- Elaborated methodologies for market penetration and business performance of the bank.
- Developed Machine Learning Models for Credit risk analysis and customer segmentation.
- Developed a visual Shiny dashboard for the financial performance of the bank over period of 2016- 2018 Quarter three.

**College du Christ Roi- Nyanza****Jan. 2013 – Jul.2017****Mathematics and Physics Teacher****Key accomplishments**

- Developed Mathematics and Physics teaching materials based on the National curriculum development and deliver the course contents.
- Assessed and evaluated students and participated in co-curricular activities

**EDUCATION****The University of Kigali, Kigali- Rwanda****May 2018 – Dec. 2021**

Master of Science in Economics

**The African Institute for Mathematical Sciences, AIMS Rwanda****Aug. 2017 – Feb 2019**

MSc. in Mathematical Sciences,

Cooperative Education

**The University of Rwanda, College of Education, Kigali Rwanda****Jan. 2011 – Aug. 2014**

Bachelor of Physics with Education

**SCHOLARSHIPS, AWARDS, AND MEMBERSHIP**

- 2011-21014: Government Scholarship recipient (800,000Frw/year) for undergraduate studies at the University of Rwanda.
- 2017-2019: MasterCard Scholarship recipient (25,000USD/year) for master's studies at the AIMS Rwanda, Cooperative Education.
- 2019: MasterCard scholar medal.

- 2020: Innovation Project seed fund worth 4,000USD provided by MCF-AIMS Social challenge Innovation Fund to implement **“Automatic Irrigation and Soil Nutrients Monitoring Project”**.
- 2022: UNESCO’s Participation Program 2022-2023 fund recipient (26,000USD) to implement **“Digital Monitoring of Indoor Air Quality in TVET and Secondary Schools in Rwanda: Case of Kigali City”**
- Member and Country National Trainer, AI for Disaster Risk Reduction in East Africa.
- Member, Community of Practice in the field of Data Science, Rwanda
- Member, Machine Learning and Data Science Africa (MLDS-Africa)
- Member, AI for Good, United Nations Platform for Artificial Intelligence.

#### **INTERNATIONAL CONFERENCE ATTENDED AND PRESENTATION**

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- April 2019: Attended “Radiant Earth Platform and Geospatial Fundamentals and Data Analysis workshop” organized by the Radiant Earth Foundation, Earth Imagery for Impact.
- October 2021: Presented on “Air Quality Data-Driven Research for Global Biodiversity Conservation” at International Conference on 50<sup>th</sup> Anniversary UNESCO’s MAB Programme, Kigali| Rwanda October 2021.
- November 2021: Presented on “Text Mining for Public Sentiment Analytics in the National Bank of Rwanda” at African Economic Research Consortium International Conference, Kenya| Nairobi, November 2021.
- June 2022: Presented on “Critical Analysis of Household’s Socio-Economic Status on Childhood Stunting in Rwanda” at 5<sup>th</sup> International Conference of East African Business and Economic Watch, EABEW 5, Kigali| Rwanda, June 2022.

#### **PUBLICATIONS**

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- **Gisa Murera**, S.R. Muhongayire and D. Ntirushwamaboko. (2021). “Text Mining for Public Sentiment Analytics in the National Bank of Rwanda” AERC Working Paper Series: CF009, African Economic Research Consortium, Nairobi, November 2021.
- **Gisa Murera**, Afolabi Luqman, Richard Kabanda, and Ilcile Delice Irakoze. (2022). "Critical Analysis of Household’s Socio-Economic Status on Childhood Stunting in Rwanda." 5<sup>th</sup> International Conference of East African Business and Economic Watch, EABEW 5; 2022.

#### **KEY CONSULTANCIES**

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- Data Scientist postgraduate attachment on **“Integrated Digital Surveillance of Air Pollution in African Cities Project”** implemented by African Institute for Mathematical Sciences, AIMS, University of Ghana and Imperial College of Medicine funded by Digital Innovation for Development in Africa, DIDA.
- Sub-contracting work on NetCDF climate data extraction, conversion into ASCII and CSV formats, their manipulations, and visualization on **“Developing Capacity for Climate Resilient Road Transport Infrastructure”** under the contract between RTDA and Joint Venture of Finish Overseas Consultants (FinnOC) Ltd (Finland), Finish Consulting Group (FGC) International Ltd (Finland), Green Growth Solutions (GGS) Ltd (Rwanda), and Mr. Alphonse Mutabazi.

## KEY PIECES OF TRAINING

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- Data Scientist National Trainer on “**Artificial Intelligence for Environmental Degradation Risk Reduction Project: AI ChatBot**” implemented by Rwanda National Commission for UNESCO in partnership with UNESCO head office and Japanese Software development company and WeatherNews, held at Rwanda Coding Academy, Nyabihu District, at March 2022.
- Data Scientist Trainer on “**National Training on the Impact of Robotics, Coding, Engineering, 3D Printing and Artificial Intelligence on 4<sup>th</sup> Industrial Revolution to embrace the world of tomorrow**” organized by Rwanda National Commission for UNESCO in partnership with UNESCO head office, Rwanda Polytechnique, and Ministry of Education., held at FAWE Girls School, Kagugu, Kigali at June 2022.

## COMMUNITY SERVICE

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- February 2018: Together with AIMS students had a visit to Secondary School students at LDK to advocate for the beauty and ability of mathematics to solve societal problems, hence life transformation.
- April 2018: Together with AIMS students visited the Kigali Genocide Memorial.

## TECHNICAL SKILLS

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- Certified Data Scientist with R Track
- Programming: R, Python, and SQL
- Big Data Analytics: RHadoop, RHIPE, SparkR, and H<sub>2</sub>O
- DBMS: Microsoft SQL Server
- Android data collection and processing: SurveyCTO, Survey Monkey, and Kobo toolbox.
- Statistical software: EVIEWS and STATA

## LANGUAGES

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- English: Proficient
- French: Intermediate
- Kinyarwanda: Native

## REFEREES

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### **Prof. Ernest FOKOUE**

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1(919)338-6591|  
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### **Dr. Jimmy GASORE**

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### **Wilson KAMALI**

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