

ERIC MUSONERA

Geospatial & Remote Sensing Analyst | Data Scientist | GIS Developer

CONTACT

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Publications: [Msc Dissertation](#)

EDUCATION

Master of Science in Geospatial Technologies (Erasmus Mundus Scholarship Awardee)

University of Münster (Germany), Jaume I University (Spain), NOVA IMS (Portugal) | 2023 – March.2025

Bachelor of Science in Geography (Urban & Regional Planning)

University of Rwanda | 2016 – 2021

CERTIFICATES & AWARDS

[ArcGIS Pro Associate 2101](#) | Esri (2023)

[AWS Certified Cloud Practitioner](#) | AWS(2025)

[Erasmus Mundus Scholarship](#) | European Commission (2023)

SKILLS

Core Competencies >>>> Level [1-5]

Geospatial Solutions

ArcGIS Pro [5/5] QGIS [5/5] ArcGIS Enterprise [4/5]
GeoServer [4/5] PostGIS [5/5] Google Earth Engine [4/5]

Business Intelligence & Visualization:

ArcGIS Dashboards [5/5] | Power BI [4/5]
Tableau [4/5] | D3.js [3/5]

Programming & Frameworks:

Python [4/5] | SQL [5/5] | JavaScript [4/5] | R [3/5]
HTML & CSS [4/5] | ArcPy [5/5] | Flask [4/5]
Django [3/5]

Data Engineering & ETL:

PostgreSQL (5/5) | AWS Athena [4/5] | SQLite[4/5] |
FME[3/5] | Pandas/GeoPandas[5/5] | AI/ML [3/5]
ArcGIS Model Builder [5/5] |

Cloud Computing:

AWS[2/5] | GCP[1/5]

Version Control & CI/CD:

Docker [4/5] | GitHub [5/5]

Soft Skills:

Leadership | Agile Collaboration | Technical Training |
Problem-Solving

PROFILE SUMMARY

Geospatial & Remote Sensing Analyst, Data Scientist, and GIS Developer with expertise in spatial data analysis, machine learning, and full-stack GIS solutions. Certified ArcGIS Pro Associate and AWS Cloud Practitioner, with hands-on experience in managing geospatial databases, developing AI-driven applications, and delivering scalable solutions for governments, NGOs, and private sectors. Adept at bridging technical and strategic needs to solve real-world challenges.

WORK EXPERIENCE

GIS Specialist

Esri Rwanda, Kigali, Rwanda | Sep 2020 – Aug 2023

Since joining Esri Rwanda Ltd in 2020, I have been engaged in various projects centered around spatial data processing, analysis, and visualization. My role necessitated a comprehensive understanding of Esri software and other GIS tools to provide support to government agencies, international organizations, NGOs, and private-sector clients in the region.

Key Responsibilities:

- Managing PostgreSQL geospatial databases:** for efficient storage, querying, and analysis of spatial data.
- Integrating PostGIS databases:** with ArcGIS Online and ArcGIS Enterprise, ensuring smooth data sharing and web-based GIS capabilities.
- Developing geospatial applications:** for desktop, web, and mobile platforms to enhance spatial analysis, mapping, and decision-making.

In addition, I contributed to the implementation of GIS solutions customized to meet clients' needs, ensuring that geospatial technologies were effectively utilized to address real-world challenges across Rwanda, Burundi, and the Republic of Congo.

Student Leaders Forum On Sustainability and Climate Change

Prime Biodiversity Conservation and FES Rwanda, Kigali, | Feb – May 2021

Through the program, various activities, including workshops and idea-generation sessions, have been conducted to promote sustainability, climate change mitigation, and adaptation. The core discussion points include:

- Raising awareness on climate change and its impacts.
- Evaluating the effectiveness of climate change mitigation and adaptation strategies.
- Understanding climate finance concepts, approaches, and the application of appropriate technologies.

Academic Internship

Rwanda Housing Authority, Kigali, Rwanda | Aug 2019 – Sep 2019

- Assisted in street addressing initiatives and layout planning for urban development projects.
- Supported data collection and master plan enhancements.



PROJECTS & ASSIGNMENTS

Work Undertaken That Best Illustrates Capability to Handle the Tasks Assigned

1 Building Urban Dynamic Map and Decentralizing the Spatial Development Framework| MINIFRA & Enabel| Kigali| 2022

- Designed geodatabases and streamlined data structures for UDM projects.
- Developed web apps and dashboards for real-time data visualization.
- Configured field data collection tools for public engagement in urban updates.

Impact: Enhanced data accessibility and monitoring efficiency by 80%.

3 Monitoring Grid Connection Rate Across Rwanda|| EUCL|| Kigali|| 2021

- Assessed the distribution of energy connectivity across Rwanda, identifying disparities in grid connection rates at the district level.
- Provided insights into on-grid, off-grid, and hybrid energy connections to support equitable energy distribution strategies.

Technologies Used:

- **PostgreSQL:** Managed dataset storage and accessibility.
- **ArcGIS Pro:** Conducted data cleaning, processing, and spatial analysis.
- **Portal for ArcGIS:** Developed web-based interactive maps for broader accessibility.
- **ArcGIS Dashboards :** Designed a dynamic dashboard for real-time energy connectivity monitoring and analysis.

5 Capacity Building on Geospatial Techniques in Water Resource Management | Rwanda Water Board | 2020

- Prepared training materials and study guides on flood mitigation, erosion control, and water quality control.
- Developed a GIS-based algorithm for flood control and a RUSLE-based model for soil erosion modeling, improving risk assessment and mitigation strategies.
- Designed an integrated automated workflow for water quality control, along with a dashboard application to track changes in water quality over time.

Impact: Improved flood prevention measures and water resource monitoring by 75%.

2 Change Detection and Urban Growth Monitoring Toolkit | City of Kigali| 2022

- Developed a model to classify MAXAR satellite images , extracting meaningful insights for spatial analysis.
- Designed geospatial applications to monitor urban growth and construction, enabling data-driven decision-making.
- Conducted training sessions on field application usage for municipal officials, enhancing their ability to collect and manage geospatial data.

Impact: Streamlined urban planning efforts, reducing inefficiencies by 90%.

4 Integrated Aerial Survey for Lidar Topographic Data Acquisition | CHARIS| Kigali | 2022

- Performed data quality checks to ensure compliance with topological rules, validating extracted vector data from drone-captured imagery.
- Developed a model semantic framework to verify spatial relationships in data, enabling seamless merging, integration, and database loading.

6 Training on ArcGIS Desktop Pro, Online, and Field Apps | Minister of Environment| Kigali | 2022

- Delivered and installed ArcGIS Desktop Software.
- Taught geodatabase creation, editing, and analysis using model builder.
- Instructed on creating web maps and configuring apps using web app builder, story maps, and dashboards.
- Demonstrated survey design via both XLS forms and web platforms.
- Explained the use of workforce tools for field task assignments.

REFEREES

- Prof. Michael Gould Carlson/gould@uji.es/Esri educator/Jaume I University
- Mr. Jean Pierre Gatera/j.gatera@esri.rw/Managing Director/Esri Rwanda

LANGUAGES

- English: Fluent
- German: B1 level
- French: Basics

HOBBIES

Biking| Jogging|
Learning New Skills

