REGINA KAVIVE KILWENGE

Nairobi, Kenya | +254717827140 | reginakilwenge@gmail.com

Summary

Analytical Data Scientist with strong foundation in data interpretation and statistical analysis. Skilled at transforming data sets into actionable insights that drive strategic decision-making. Demonstrates thorough understanding of data visualization tools and advanced analytical techniques to support key stakeholders and optimize processes. Committed to leveraging data to uncover trends, predict outcomes, and deliver measurable results.

Skills

Technical Skills

- **PostGIS & PostgreSQL**: Managed and optimized geospatial and relational databases for efficient data storage and analysis.
- **MySQL & MongoDB**: Designed and maintained databases for data management.
- **R & Python**: Automated data processing, analysis, modelling (including machine learning), and reporting.
- **Google Earth Engine**: Processed satellite imagery for remote sensing analyses including crop mapping, area segmentation and environmental monitoring.
- **Git & GitHub**: Used for version control and collaborative development, ensuring efficient code management and seamless team integration.
- **Apache Spark & Hadoop: F**or distributed data processing.

- **QGIS & ArcGIS**: Created maps and performed spatial analysis for geographic research.
- **ODK & ONA**: Implemented data collection solutions for field surveys with mobile devices.
- **AWS, Azure, GCP & DO**: Managed cloud infrastructure for deployment, scalable computing resources, and data storage solutions.
- **PowerBI & Tableau**: Developed interactive dashboards and reports to visualize and communicate data insights.
- **RShiny, Dash-Plotly, Streamlit**: Built interactive web apps and data visualizations for user-friendly data exploration using R and python programming languages.
- **HTML/CSS & JavaScript**: Web development with interactive features and responsive design.

Soft Skills

- **Communication**: Effectively conveyed complex ideas through clear reports, presentations, and collaborative discussions.
- **Teamwork & Coordination**: Worked seamlessly with cross-functional teams to meet deadlines and achieve project goals.
- **Problem-Solving**: Identified challenges and implemented innovative solutions to optimize processes and streamline workflows.
- **Adaptability**: Quickly adjusted to new tools, technologies, and shifting project requirements.

- **Critical Thinking**: Assessed situations from various perspectives to make informed decisions, enhance processes, and prioritize tasks.
- **Time Management**: Prioritized tasks effectively to meet deadlines without compromising quality.
- **Collaboration:** Fostered a positive collaborative environment by promoting open communication and knowledge sharing.
- **Attention to Detail:** Maintained thoroughness and consistency in data analysis, reporting, and code development.

Experience

GIS Data Scientist   **04/2025 to Current**
Rainforest Alliance   **Nairobi, Kenya**
- Designed and implemented GIS and remote sensing workflows for crop mapping, to enable deforestation monitoring and supporting certification through advanced spatial data science solutions.
- Delivered actionable geospatial insights and conducted training workshops for farmers and partners to improve data collection and enhance sustainable land-use practices.

Senior Data Analyst   **04/2023 to 04/2025**
International Institute of Tropical Agriculture   **Nairobi, Kenya**
- Developing and maintaining a Data Collection Monitoring dashboard that enables users to track near real-time progress of field data collection events, enhancing oversight of large-scale experiments across multiple locations and improving collaboration and data accuracy.
- Facilitating the integration of new project use cases into the Data Collection Monitoring dashboard, customizing it to provide real-time insights into data completeness and quality. This involved close collaboration with use

case teams and mapping user needs to ensure tailored functionality, ensuring adaptability across diverse projects within the Excellence in Agronomy initiative
- Executing Extract, Transform, Load (ETL) operations and performing data analysis tasks
- Creation and ongoing management of a comprehensive platform designed to monitor and assess impact across various use cases within the Excellence in Agronomy initiative
- Implementing frameworks for data standardization, and database management, implementing robust monitoring mechanisms, and analyzing results to drive informed decision-making and continuous improvement
- Designing, establishing, and managing databases to facilitate efficient data storage, retrieval, and manipulation for the Excellence in Agronomy initiative
- Developing specialized functions for retrieval and standardization of spatial data (climate and weather) tailored for utilization in crop modeling applications. These functions were crafted to seamlessly access diverse spatial datasets from various sources, ensuring consistency and compatibility across different geographic regions and formats.
- Creating APIs to facilitate seamless access to carob data and key performance indicators (KPIs), enabling efficient data visualization and reporting.
- Creating and maintaining a customized Sampling Framework platform that enables users to select relevant areas and locations for conducting validation trials for different use cases. The tool leverages Google Earth Engine, Python, and JavaScript to implement various algorithms for optimized location selection.
- Deploying dashboards and APIs and other system integrations to Azure, ensuring scalable and secure access to real-time data and analytics for end-users.
- Contributing to the publication of articles and other research outputs in CGSpace, collaborating with research teams to share insights, methodologies, and findings within the CGIAR research community.
- Creating comprehensive documentation for tools and scripts, providing clear guidelines for usage, troubleshooting, and maintenance to ensure smooth implementation and future scalability.
- Capacity building: Conducting training sessions focused on equipping stakeholders with the necessary skills to effectively utilize a range of tools for diverse use cases within the Excellence in Agronomy initiative. These activities involved hands-on workshops and documentation to empower users in leveraging tools optimally for their specific requirements

Consultant: Geospatial Data Scientist   **06/2022 to 04/2023**
International Institute of Tropical Agriculture   **Nairobi, Kenya**
- Designed and developed a data monitoring dashboard to provide real-time insights on completeness and quality of data collected ensuring generic nature for usability across various projects in the Excellence in Agronomy initiative
- Documented scripts and procedures and packaged them for transparent transfer of knowledge

Consultant: Geospatial Data Scientist   **03/2020 to 05/2022**
International Institute of Tropical Agriculture   **Kigali, Rwanda**
- Developed data collection forms (ODK & ONA), performed data cleaning, and supported the creation and maintenance of databases to ensure data quality and organization.
- Developed automated analytical workflow for assessing and communicating Banana Xanthomonas Wilt incidence risk, with hi-fi charts & maps to support quarterly communication and dissemination of scaling impact, including spatial and temporal changes in disease threat.
- Designed, developed, and maintained a project website and an interactive dashboard for real-time monitoring of the Banana Xanthomonas Wilt disease as reported by farmers across Rwanda for early warning and deliver tailored agronomic recommendations, resource allocation to various sectors and policy development.
- Data analysis and model development on the incidence of Banana Xanthomonas Wilt and multitemporal analysis for banana-land classification in Rwanda using Remote Sensing and machine learning techniques.
- Designed, developed, and maintained an interactive dashboard using R Shiny for visualization and easy access and download of data on RTB crops' suitability under climate change.
- Data analysis and modelling on climate change impacts on pests and diseases for RTB crops in the Great Lakes Region using machine learning techniques for impact-based forecasting for early interventions.
- Designed, developed, and maintained a platform for visualizing outputs for diet quality analysis in Rwanda
- Contributed data analysis for insights on diet quality metrics across space and time and derived trends.
- Contribute to scientific research papers' publication and prepare reports, presentations, infographics, posters and brochures on various project activities for sharing to wider audience.

Research Intern   **07/2019 to 03/2020**
International Institute of Tropical Agriculture   **Kigali, Rwanda**
- Supported the development of a survey tool for tracking and assessing knowledge transfer to banana farmers for project validation and subsequent data cleaning and analysis

- Developed a data-based story-themed visualization for the project's progress reporting, showcasing major project insights and outputs

- Writing reports and minutes, and creating infographics, posters and brochures for project-related meetings, workshops, trainings and even social media communication

Data Analyst   **02/2016 to 05/2018**
Geomaps Africa   **Nairobi, Kenya**
- Data collection, data cleaning and spatial analysis; generated maps and reports for presentation.

Data Collection Contractor   **05/2015 to 11/2015**
Kenya Power
- Collection of spatial data of the Kenya Power Low Voltage network for the provision of location intelligence.

GIS Data Analyst Intern   **06/2014 to 09/2014**
Kenya Power   **Nairobi, Kenya**
- Data collection, analysis and mapping of power distribution and management using AutoCAD and Facilities database manager (FDB).

Fellowships / Certifications

The African Women in Data Science Fellowship, Kenya, 2025-2026
Big Data Analytics for Development, African Institute for Mathematical Sciences (AIMS), Rwanda, 2019
Computer Science: IBM Full Stack Software Developer Professional Certificate, Coursera, 2024

Education

MSc.: **Data Science**   **10/2020**
University of Rwanda- African Centre of Excellence for Data Science   Kigali, Rwanda

BSc.: **Geospatial Engineering**   **09/2015**
The University of Nairobi   Nairobi, Kenya

Activities

- Member: Forum for African Women Educationalists in Kenya
- Member: Women in Data
- Member: Women in Geospatial
- Adventure
- Reading

Awards

- DR. EDDAH GACHUKIA SCIENCE PRIZE, 04/01/18, University of Nairobi
- DAVIS & SHIRTLIFF PRIZE, 04/01/18, University of Nairobi
- IITA AWARDS OF EXCELLENCE 2023, Outstanding Support/ Specialist, IITA
- IITA AWARDS OF EXCELLENCE 2024, Outstanding Support/ Specialist, IITA

Publications

- UAV-based mapping of banana land area for village-level decision-support in Rwanda, Kilwenge, R., Adewopo, J., Sun, Z., Schut, M., 2021, Remote Sensing, 13, 24, 4985
- Leveraging digital tools and crowdsourcing approaches to generate high-frequency data for diet quality monitoring at population scale in Rwanda, Manners, R., Adewopo, J., Niyibituronsa, M., Remans, R., Ghosh, A., Schut, M., Egoeh, S.G., Kilwenge, R., Fraenzel, A., Frontiers in Sustainable Food Systems, 534
- Climate-Related Risk Modeling of Banana Xanthomonas Wilt Disease Incidence in the Cropland Area of Rwanda, Kilwenge, R., Adewopo, J., Manners, R., Mwizerwa, C., Kabirigi, M., Gaidashova, S., Schut, M., 2023, Plant Disease, 107, 7, 2017-2026
- Kilwenge, R., Elmido-Mabilangan, A. & Kreye, C. (2024). Validation Analytics Guideline 2024. Excellence in Agronomy Initiative, CGIAR, (21 p.).

Portfolio and Other Links

- My portfolio
- ORCID
- GitHub
- LinkedIn

References

Available upon request