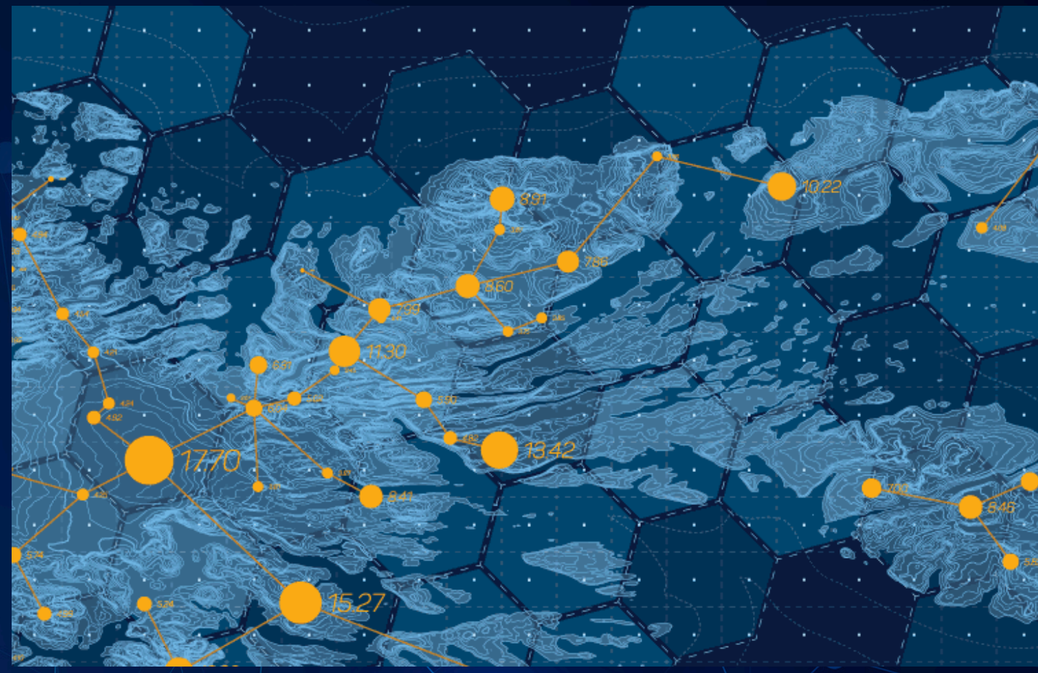
Practical Geospatial and AI Applications for MSMEs in Rwanda



Introduction

Data is becoming central to Rwanda’s transformation agenda, serving as a foundation for evidence-based decision-making. Geospatial technologies and artificial intelligence are emerging as powerful tools that enhance planning and efficiency in trade, industry, and MSME development. Rwanda has already begun applying these innovations across multiple sectors, with promising results that demonstrate their potential to drive inclusive growth and competitiveness.

Current Geospatial & AI Use Cases in Rwanda

Rwanda Space Agency (RSA)

- Launched RwaSat-1 in 2019, providing data for soil moisture analysis, land use surveys, and crop yield estimates, supporting agricultural planning and management

Ministry of Trade and Industry (MINICOM)

- Utilizes geospatial tools to monitor industrial parks by mapping the location and operational status of industries. This facilitates efficient land allocation and the tracking of industrial activities.

Rwanda GeoPortal (MININFRA)

- Offers GIS data for urbanization, infrastructure projects, and industrial parks, facilitating informed planning and development.

Health & Social Services

- GIS-based health facility mapping.
- AI-supported epidemic tracking (COVID-19 data modeling).

AI Challenges

01 Limited local expertise in AI → Few professionals skilled in building and maintaining AI models.

02 Data is scattered across institutions and formats, making integration and analysis difficult → AI can't make good predictions without clean, complete, and uniform data

03 Gaps in real-time, high-quality data → Much of the data is outdated, incomplete, or fragmented.

04 Reluctance to share data → Institutions often keep data siloed, making integration difficult

05 Fear of using AI → Many people are unsure of AI's reliability, worry about job loss, or don't fully trust the technology.

Geospatial Challenges

01 Limited local expertise in GIS → Few trained specialists to manage and analyze spatial data.

02 Infrastructure still developing → Need for better internet, high-resolution imagery, and modern mapping tools

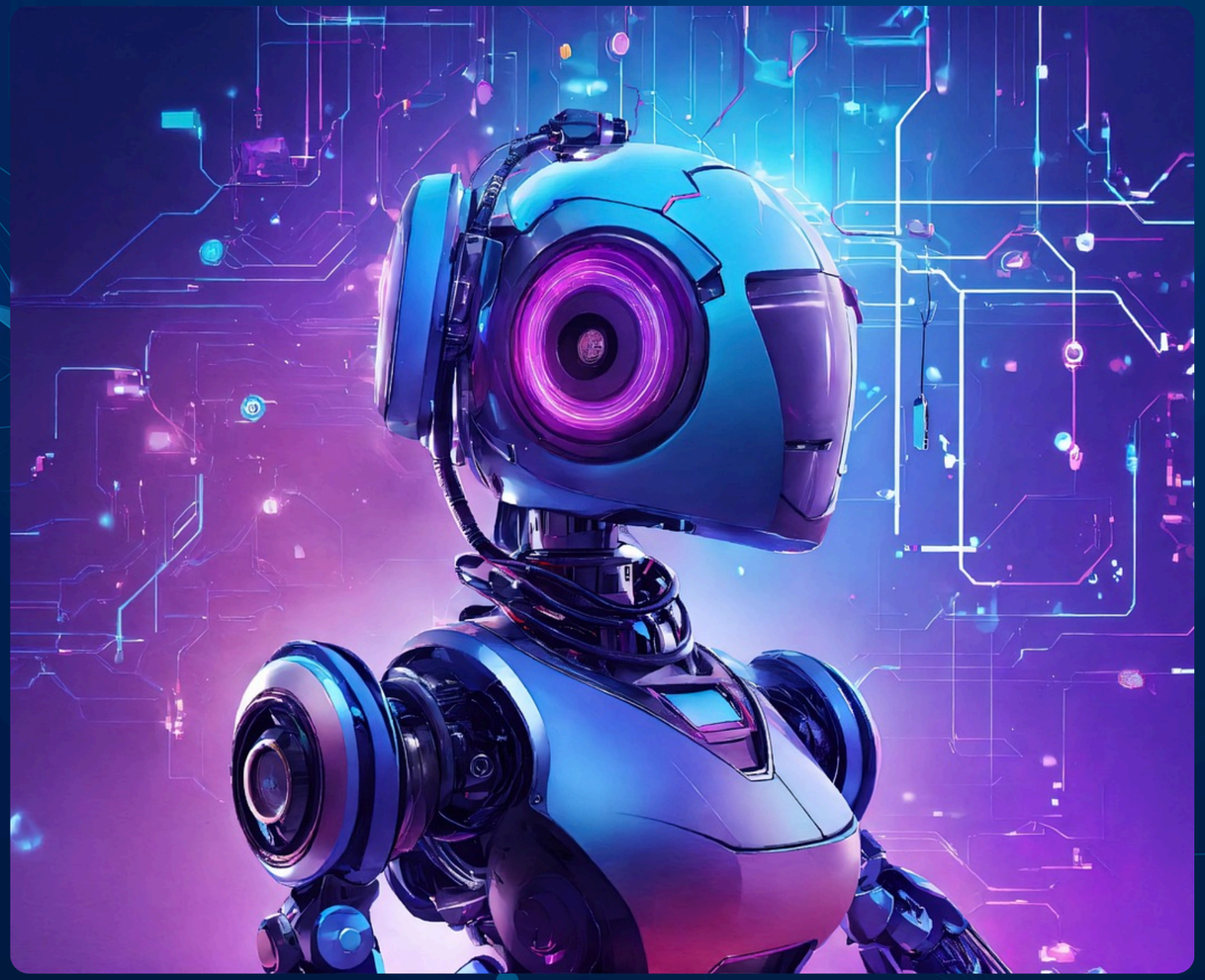
03 High costs of satellite imagery & tools → Expensive to acquire, update, and maintain.

04 Coverage limitations → Not all areas of Rwanda are mapped with the same level of detail

05 Dependence on external providers → Reliance on foreign companies for imagery and advanced technology.

Conclusion

Rwanda is making steady progress in turning data into actionable decisions through geospatial technologies and AI. Practical applications—such as managing industrial parks and monitoring crops demonstrate the value of these tools. While challenges remain, continued investment and collaboration will enable Rwanda to fully leverage data to support MSMEs, optimize resource allocation, and drive sustainable national development.



Thank You

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