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Algorithmic Sovereignty and Local Innovation

Whose Intelligence Is It Anyway?

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Opening Reflection

Artificial Intelligence is often described as the future, but whose future does it serve? In South Africa, where data is abundant but infrastructure uneven, the question of algorithmic sovereignty is not academic, it is existential. If we do not build and govern our own AI systems, we risk becoming digital exporters of raw data, dependent on foreign technologies that do not understand our languages, cultures or needs. Innovation must be local, ethical and context-aware. Otherwise, we are simply refining someone else's vision with our own resources.

What's Happening Now

- Benjamin Rosman, Director of the WITS Mind Institute, defines algorithmic sovereignty as the ability to design, develop and govern AI systems locally, so they reflect domestic laws, values and priorities.
- Blade Nzimande, Minister of Science and Technology, has called digital sovereignty essential to national sovereignty, warning against over-reliance on foreign platforms.
- The African Union's Continental AI Strategy (2024) promotes local innovation, ethical governance and data sovereignty across member states.
- South African data is routinely used to train foreign AI models, which are then sold back to local institutions, often at high cost and poor contextual fit.

What's Changed: From Data Sovereignty to Algorithmic Control

Before AI:

South Africa focused on data protection laws like POPIA, ensuring privacy and consent. AI systems were largely imported and externally governed.

Now:

The conversation has shifted to algorithmic sovereignty, building local capacity to create, refine and deploy AI tools that serve South African realities.

Key Shift:

From protecting data to owning the systems that interpret it, from passive regulation to active innovation.

Why It Matters

Without algorithmic sovereignty, South Africa risks becoming a digital colony, feeding global models with local data, while receiving tools that misunderstand our context. This undermines autonomy, distorts decision-making and perpetuates inequality.

From a systems-thinking perspective, sovereignty is not isolation, it is intentional design. It means building AI that understands isiXhosa idioms, township economies and rural healthcare needs. It means shaping technology that reflects our values, not just our vulnerabilities.

Philosophically, this aligns with decolonial theory, Ubuntu ethics and technological justice. Intelligence must be rooted in place, people and purpose. Otherwise, it becomes extraction, not empowerment.

Reflective Responses

What does algorithmic sovereignty look like in practice?

It means investing in local AI research, open-source models, and African datasets. It means training engineers, ethicists and educators to build tools that serve our communities.

How do we balance global collaboration with local control?

By forming partnerships that respect African leadership, by retaining data ownership, and by insisting on transparency in imported systems.

What risks emerge if we fail to build local AI capacity?

Loss of economic competitiveness, cultural erasure, and vulnerability to geopolitical shifts. Without sovereignty, we are users, not authors, of our digital future.

Sidebar: Facts and Philosophy

Statistics and Insights (2025):

- Less than 3% of global AI training data includes African languages or contexts.
- South Africa's AI market is projected to grow from \$4.5 billion in 2025 to \$16.5 billion by 2030.
- The Deep Learning Indaba's African Datasets Initiative is working to close the contextual gap in global AI models.

"Just as a nation with oil but no refinery remains dependent, so a nation with data but no algorithmic capacity is equally vulnerable." - Benjamin Rosman
