

PROBES snapshot

Longa, automated speech recognition for Bantu languages

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What is a probe?

PROBES are early-stage, safe-to-fail digital experiments launched under the Digital Transformation Accelerator to explore new tools and ideas across CGIAR. They are designed to test concepts in real contexts, learn what works and what does not, and generate insights that inform future design, prototyping, or scaling decisions.

Imagine it: A tool that listens to farmers speaking Luganda and turns their voice notes into text so services can respond faster and better.

The promise

Farm Radio International works with thousands of African farmers, but many struggle to access digital advisory tools because of literacy barriers, noisy connections, and their use of languages like Luganda and Bambara that are unsupported by voice-based systems. If speech technologies can understand real farmer voices across diverse languages and noisy environments, more farmers can be part of the digital transformation.

What's innovative

Longa applies automatic speech recognition, machine translation, and natural language processing to African languages that are severely underrepresented in global datasets. The tool is trained on open-source African voice data, fine-tuned for Luganda, and designed to handle agricultural vocabulary, regional accents, and real-world audio conditions. It seeks to show how AI can strengthen proven channels like Farm Radio International.

What we did and learned

Once trained, the model was tested with real callers and showed good transcription of Luganda as well as strong potential for channel integration. Challenges included limited labeled voice data, noise from markets and fields, and underrepresentation of women's voices leading to uneven accuracy. The probe showed that AI tools for African languages are feasible but require more diverse datasets, noise-robust models, and human validation.

What's next

- Expanding datasets and strengthening ethical safeguards
- Scaling African-language speech recognition for advisory services
- Testing use by CGIAR programs for monitoring and surveys

SDG alignment



Submit a probe

Are you working with an emerging digital technology that might contribute to CGIAR's 2030 outcomes? Would you like to try this in a safe-to-fail environment?



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