



Inclusive AI for Future Technologies: Advancing isiZulu, isiXhosa and Sepedi

Prof Matthew Adigun (University of Zululand)

Monday, 4 May 2026 | 16h00–17h00 SAST

HOW TO ATTEND:

In person (main venue):

- Road House Cinema (Neelsie) Stellenbosch University

Watch at satellite venues:

- Room P215, 2nd Floor Physics Building University of the Witwatersrand
- Seminar Room K310 Physics Building G5 North-West University

Online (live stream)

--- Please note, a recording of the lecture will be published on the NITheCS YouTube channel following the event ---

ABSTRACT

Large Language Models (LLMs) are reshaping the future of digital technologies by enabling more natural interaction between people and intelligent systems. Yet their benefits remain unevenly distributed because their development depends heavily on vast digital text resources, which are scarce for many African languages.

This project addresses that imbalance by advancing inclusive AI for three widely spoken South African languages: isiZulu, isiXhosa, and Sepedi. It brings together a multi-university consortium to develop contextually relevant open language models by creating curated digital corpora, adapting and training LLMs, and designing methods suited to low-resource language settings.

Beyond technical model development, the project places strong emphasis on ethics, community engagement, and cultural sensitivity. It investigates how language technologies can be developed responsibly, with attention to data ownership, representation, bias, and the social implications of AI deployment in historically under-represented communities. Application areas include education, health communication, and ICT support, where improved language technologies can strengthen access to knowledge and services.

By combining natural language processing innovation with local relevance and participatory design, the project contributes to both the scientific advancement of low-resource language AI and the broader goals of digital inclusion, linguistic empowerment, and sustainable technological development in South Africa.

BIOGRAPHY

Prof Matthew Adigun is a senior Computer Science scholar. His career spans roles from the University of Ife in Nigeria to Contract Senior Professor at the University of Zululand. His research has evolved from software and distributed systems into AI, cloud computing, cybersecurity, and ICT for development, addressing areas like intelligent health systems and secure platforms. He has a solid publication record and extensive postgraduate supervision, contributing to research capacity. His contribution to the computing field in South Africa was recognised with the 2020 SAICSIT Pioneer Award.



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