CERTIFICATE

of Participation

The University of KwaZulu-Natal (UKZN), South Africa, in collaboration with the Harvard T. H. Chan School of Public Health (Harvard Chan), USA, and Heidelberg University, Germany, Awards this certificate to

Rehema Shungu

for your participation in the Deep Learning short course of the WASHA TAKWIMU (Working on Application for Data Science and Health in Africa) Research Training Program on Harnessing Data Science for Global Health Priorities in Africa (DSI-A). The course covered the following topics:

- Introduction to Deep Learning (DL).
- Introduction to Neural Networks (NNs) – single layer NNs, node inputs, biases, outputs, activation functions, and SoftMax layers.
- MultiLayer Perceptrons (MLPs), loss functions, training, and backpropagation.
- Convolutional Neural Networks (CNNs), kernels, convolutional and fully connected layers, and CNN autoencoders.
- Recurrent Neural Networks (RNNs), input formatting, RNN types, and layouts.
- Introduction to Google Colab using Python.
- Introduction to DL for Health Sciences – use cases and example research studies; MLP implementation, model training, and evaluation.
- CNN and RNN implementation, saving and reusing models.
- Introduction to legacy DL models and transfer learning.

17th - 28th June 2024
Durban, KwaZulu-Natal, South Africa

Professor Henry Mwambi
Principal Ivestigator: DSI-A, UKZN

Dr. Nisha Nadesan-Reddy
Project Manager: DSI-A, UKZN