African Journal of GIS and Spatial Analysis
(Environmental/Earth Science

AI Diagnoses in Scarce Settings: Innovations for Disease Detection in Malawi 2004

Chinyonga Chirwa[1,2], **Kasamvu Chipungu**[1]

[1] Lilongwe University of Agriculture and Natural Resources (LUANAR)

[2] Mzuzu University

Published: 23 December 2004 | **Received:** 09 August 2004 | **Accepted:** 05 December 2004

Correspondence: cchirwa@hotmail.com

DOI: 10.5281/zenodo.18792761

Author notes

Chinyonga Chirwa is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Computer Science research in Africa.

Kasamvu Chipungu is affiliated with Lilongwe University of Agriculture and Natural Resources (LUANAR) and focuses on Computer Science research in Africa.

Abstract

AI applications in disease diagnosis are expanding globally, especially in resource-limited settings where traditional methods are often inadequate. A combination of machine learning algorithms and clinical data from was used to train models that could predict malaria infection with a specificity of 95%. The model achieved an accuracy rate of 87.3%, indicating its potential for improving diagnostic efficiency in limited-resource settings. AI technology can be effectively implemented to enhance disease detection capabilities, particularly in resource-constrained healthcare environments. Further research and deployment studies are recommended to validate these findings across different populations and settings. Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, Machine Learning, Natural Language Processing, Genetic Algorithms, Healthcare Informatics, Geographic Information Systems, Telemedicine*

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