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AI in Diagnosing Diseases: An Exploration of AI Applications in Resource-Limited Healthcare Settings in Malawi

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Abstract

Diseases in resource-limited healthcare settings often pose significant diagnostic challenges due to limited availability of trained medical personnel and essential diagnostic tools. A systematic review was conducted using PubMed and Google Scholar databases to identify relevant studies published between and . Studies were included if they evaluated AI applications for disease diagnosis, particularly those involving resource-limited healthcare settings in Malawi. Machine learning models demonstrated an accuracy rate of 85% in diagnosing common diseases such as malaria and tuberculosis using limited data sets from clinics in Malawi. The findings suggest that AI can be effectively applied to improve disease diagnosis in resource-limited healthcare settings, although further validation is required before widespread implementation. Investigate the scalability of these models across different diseases and geographical regions. Develop training programmes for local health workers on using AI tools for diagnostic support. AI, Disease Diagnosis, Resource-Limited Healthcare, Machine Learning, Malawi 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, AI, Machine Learning, Data Analytics, Healthcare Informatics, Resource Allocation, Third World Computing*

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