



AI-Aided Diagnostics in Malawi's Resource-Constrained Healthcare Settings

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Abstract

AI-aided diagnostics have shown promise in resource-limited healthcare settings by enhancing accuracy and efficiency of disease diagnosis. A cross-sectional study was conducted using machine learning models trained on a dataset of clinical records from Malawian healthcare facilities. The study aimed to assess model accuracy through precision and recall metrics. The AI models achieved an overall accuracy rate of 85% in diagnosing common diseases, with higher precision for malaria cases (90%) compared to tuberculosis (75%). AI-aided diagnostics can significantly improve disease diagnosis outcomes in resource-constrained settings. Further research should focus on model validation across different geographic regions and the integration of AI into existing healthcare workflows. AI, Diagnostics, Malawi, Precision, Recall Model estimation used $\hat{\theta} = \operatorname{argmin} \{ \theta \} \operatorname{sumiell} (y_i, f\theta (\xi)) + \lambda l \operatorname{Vert} \theta r \operatorname{Vert} 2^2$, with performance evaluated using out-of-sample error.

Keywords: Sub-Saharan, AI, machine learning, diagnosis, resource-limited, sub-saharan, African

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