African FinTech and Digital Finance

Satellite Imagery and AI in Land Use Mapping and Monitoring in Gambia: A Systematic Review

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Abstract

This study addresses a current research gap in Computer Science concerning Using Satellite Imagery and AI for Land Use Mapping and Monitoring in Gambia. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A structured review of relevant literature was conducted, with thematic synthesis of key findings. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Using Satellite Imagery and AI for Land Use Mapping and Monitoring, Gambia, Africa, Computer Science, systematic review This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\{}\theta\}=argmin\{\theta\}sumiell(yi,f\theta(\xi))+\lambda lVert\theta rVert2^{2}$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, GIS, remote sensing, machine learning, spatial analysis*

ABSTRACT-ONLY PUBLICATION

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