Indigenous Knowledge Integration into AI Development in Egypt and West Africa Contexts

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Abstract

Indigenous knowledge systems in Egypt and West Africa have unique contributions to AI development that can enhance cultural sensitivity and inclusivity. A comparative case study approach was employed with data collected through semi-structured interviews and focus groups among local experts and policymakers. In Egypt, there is a strong emphasis on preserving cultural heritage which influences AI development strategies. In West Africa, the integration process shows higher community engagement in decision-making processes. The findings suggest that integrating indigenous knowledge into AI can lead to more culturally appropriate solutions and greater public acceptance. Policy makers should prioritise fostering collaborative environments where both traditional wisdom and technological innovation converge effectively. Indigenous Knowledge, AI Development, Egypt, West Africa, Cultural Sensitivity Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} \, sumiell\left(yi, f\theta(\xi)\right) + \lambda lVert\theta rVert\, 2^2,$ with performance evaluated using out-of-sample error.

Keywords: *Cultural Anthropology, Geographic Information Systems, Indigenous Knowledge, Machine Learning, Multidisciplinary Approaches, Participatory Design, Quantitative Methods*

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