

# RECOGNITION OF HANDWRITTEN LOWERCASE YORUBA LETTERS USING NEAREST NEIGHBOR CLASSIFIER AND FOURIER-MELLIN MOMENTS

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## **Abstract**

Several character recognition systems have been built capable of recognizing handwritten letters of the Roman, Arabic, Chinese, and certain other orthographies. In the case of the Yoruba orthography, however, we know of only one existing system capable of recognizing the diacritically-marked handwritten *uppercase* letters of that orthography. In this work, we develop a system capable of recognizing diacritically-marked handwritten *lowercase* letters of the Yoruba orthography in offline mode. Yoruba letters comprise Roman letters along with diacritics. Our character recognition system first attempts to separate the diacritics from the Roman letter. While the Roman letter is recognized in a nearest neighbor classifier, fed by orthogonal Fourier-Mellin moments as features, the diacritics are classified in a decision tree. Upon testing, a recognition rate of 100% was recorded on non-independent samples, while a recognition rate of 78.82% was achieved on independent samples.