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Deep Convolutional Neural Network for Recognition of Unified Multi-Language Handwritten Numerals

(2018) *2nd IEEE International Workshop on Arabic and Derived Script Analysis and Recognition, ASAR 2018*, art. no. 8480289, pp. 90-95.

Abstract

Deep learning systems have recently gained importance as the architecture of choice in artificial intelligence (AI). Handwritten numeral recognition is essential for the development of systems that can accurately recognize digits in different languages which is a challenging task due to variant writing styles. This is still an open area of research for developing an optimized Multilanguage writer independent technique for numerals. In this paper, we propose a deep learning architecture for the recognition of handwritten Multilanguage (mixed numerals belongs to multiple languages) numerals (Eastern Arabic, Persian, Devanagari, Urdu, Western Arabic). The overall accuracy of the combined Multilanguage database was 99.26% with a precision of 99.29% on average. The average accuracy of each individual language was found to be 99.322%. Results indicate that the proposed deep learning architecture produces better results compared to methods suggested in the previous literature. © 2018 IEEE.

2-s2.0-85056174691

Document Type: Conference Paper

Publication Stage: Final

Source: Scopus