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An online numeral recognition system using improved structural features – A unified method for handwritten Arabic and Persian numerals
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Abstract
With the advances in machine learning techniques, handwritten recognition systems also gained importance. Though digit recognition techniques have been established for online handwritten numerals, an optimized technique that is writer independent is still an open area of research. In this paper, we propose an enhanced unified method for the recognition of handwritten Arabic and Persian numerals using improved structural features. A total of 37 structural based features are extracted and Random Forest classifier is used to classify the numerals based on the extracted features. The results of the proposed approach are compared with other classifiers including Support Vector Machine (SVM), Multilayer Perceptron (MLP) and K-Nearest Neighbors (KNN). Four different well-known Arabic and Persian databases are used to validate the proposed method. The obtained average 96.15% accuracy in recognition of handwritten digits shows that the proposed method is more efficient and produces better results as compared to other techniques.

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