RESEARCH ARTICLE

A Novel Approach of Handwritten Character Recognition using Positional Feature Extraction

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Abstract— In this paper, we have presented a method of feature extraction for handwritten character recognition. We showed that our method, despite its simplicity, yields good classification results on handwritten characters. Normalization and binarization are the pre-processing techniques used for getting accurate results of classification process in handwritten character recognition. This method is based on positional properties of each pixel present in character image. First of all, add all the sample character image matrices and divide the resultant matrix by total number of matrices added, called as Avg_matrix. Then subtract it from each sample character image matrix, which results in unique features because of their positional properties of pixels present in that image. We used singular value decomposition technique to get projection vector matrix which is beneficial for more accuracy in results. Finally, we used generalized regression neural network for resulting feature vectors and obtain classification performance in the character recognition task. The proposed recognition scheme provided 82.89 percent and 85.62 percent accuracies on Devnagari and Kannada character databases respectively.

Key Terms: - Handwritten character recognition; Artificial neural network; Positional property; Feature extraction

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