Abstract

In this paper a novel method for recognition of Persian handwritten digits is proposed. This approach uses central moments, Covariance, Median and Variance that are obtained at each the box digit image as the features set. The features set consist of 140 dimensions for each instance. In the classification phase of our proposed method the support vector machines, K-Nearest Neighbor and Sequential Minimal Optimization separately are employed. In this paper is used the principal components analysis (PCA) to reduce dimension features set. the performance of these three classifiers is observed on this application in terms of the correct classification and misclassification and how the performance of K-Nearest Neighbor classifier can be improved by varying the value of k. To evaluate our proposed scheme a database of Persian handwritten digits consist of 1699 handwritten digit images is used. In the best case proposed scheme using SMO classifiers yields a recognition rate of 92.3875% for handwritten Farsi numerals.
Off-line Recognition of Persian Handwritten Digits using Statistical Concepts

- L. I. Kuncheva, 2004. “Combining Pattern Classifiers: Methods and
PODS.
- R. Duda, P. Hart, and D. Stork. Pattern Classification. Wiley Inter science, 2nd Ed.
processing systems (NIPS’99). MIT Press, 547–553

Index Terms

Computer Science
Pattern Recognition
Keywords

Central moments  Variance  Covariance  Median  support vector machine
principle component analysis

K-Nearest Neighbor

Sequential Minimal Optimization