Abstract

Classification through learning from examples is extensively applied to character recognition from last three decades. Considerable improvements in terms of classification accuracies have been made using various classification methods. But, comparison of various classifiers for the same character dataset research is not exhaustive. This paper investigates the recognition performance of support vector machine (SVM) with various kernels, multi-layer perceptron (MLP), k-nearest neighbors (kNN), naive Bayes and minimum distance classifiers for character recognition on multi-script databases viz. Arabic, Oriya and Bengali. It is found that MLP performed the best for Oriya (95.20%) and Bengali (95.10%) datasets, and SVM with radial basis function (RBF) kernel performs the best for Arabic (96.70%) dataset. Among other classifiers, kNN is giving relatively better results. In all cases, minimum distance classifier gives the worst performance. In total, MLP followed by SVM RBF kernel is found to be the most efficient among all classifiers included in this study.
A Comparative Study of Various Classifiers for Character Recognition on Multi-script Databases

References


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