Abstract

Recently there is an emerging trend in the research to recognize handwritten characters and numerals of many Indian languages and scripts. In this manuscript we have practiced the recognition of handwritten Gurmukhi numerals. We have used three different feature sets. First feature set is comprised of distance profiles having 128 features. Second feature set is
comprised of different types of projection histograms having 190 features. Third feature set is comprised of zonal density and Background Directional Distribution (BDD) forming 144 features. The SVM classifier with RBF (Radial Basis Function) kernel is used for classification. We have obtained the 5-fold cross validation accuracy as 99.2% using second feature set consisting of 190 projection histogram features. On third and first feature sets recognition rates 99.13% and 98% are observed. To obtain better results pre-processing of noise removal and normalization processes before feature extraction are recommended, which are also practiced in our approach.

Reference


Index Terms

Computer Science                      Pattern Recognition

Key words

Handwritten Gurmukhi numeral recognition
Projection histogram
Distance Profiles
Background Directional Distribution (BDD)
SVM classifier
RBF kernel

Zonal density