Abstract

Support Vector Machines (SVM) is used for classification in pattern recognition widely. This paper applies this technique for recognizing handwritten numerals of Devanagari Script. Since benchmark database does not exist globally, this system is constructed database by implementing Automated Numeral Extraction and Segmentation Program (ANESP). Preprocessing is manifested in the same program which reduces most of the efforts. 2000 samples are collected from 20 different people having variation in writing style. Moment Invariant and Affine Moment Invariant techniques are used as feature extractor. These techniques extract 18 features from each image which is used in Support Vector Machine for recognition purpose. Binary classification techniques of Support Vector Machine is implemented and linear kernel function is used in SVM. This linear SVM produces 99.48% overall recognition rate which is the highest among all techniques applied on handwritten Devanagari numeral.
recognition system.

Reference


**Index Terms**

Computer Science  
Pattern Recognition

**Key words**  
Support Vector Machine  
Devanagari Numeral Recognition  
Moment Invariant

Affine Moment Invariant