A Hybrid Model for Recognizing Handwritten Bangla Characters using Support Vector Machine

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 174
Number 1

Year of Publication: 2017

Authors:
Shyla Afroge, Boshir Ahmed

10.5120/ijca2017915312

Abstract

Considering the real time scenario, handwritten Bangla recognition is gaining a significant part of the research community. Though various studies have been performed for Bengali handwritten recognition, but a robust model for Bangla handwritten classification is still in practice. Therefore a hybrid model is presented in this paper, which intends to classify Bangla handwritten characters. The proposed model combines Zernike moments, raw binary pixels and histogram of oriented gradients features for recognizing Bangla handwritten characters which is fed to the Support Vector Machine classifier. It is observed that, the proposed model outperforms existing models with smaller epochs. Proposed model is trained and tested with “Bangla Lekha Isolated” dataset which consists of 30000 characters where 24,000 for training dataset and 6,000 for testing. This system shows 46.98% for Zernike Moments, 66.60% for Raw Binary Pixels and 87.62% for Histogram of Oriented Gradients where overall combined features achieve an accuracy of 94.88% in recognizing characters which achieves the best accuracy rate reported till date for this dataset.
A Hybrid Model for Recognizing Handwritten Bangla Characters using Support Vector Machine

References


**Index Terms**

Computer Science          Artificial Intelligence

**Keywords**

Hand written character recognition; Histogram of oriented gradients; Zernike moments; raw binary pixel ;support vector machine; Bangla OCR