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

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Abstract

Considering the real time scenario, hand written bangla recognition getting a drastic part to 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 intent to classify Bangla handwritten characters. The Proposed model combines Zernike moments, raw binary pixels and histogram of oriented gradients features for recognizing Bangla hand written characters which is feed to the Support Vector Machine classifier. It is observed that, the proposed model outsails existing models with smaller epochs. Proposed model is trained and test 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.
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