Handwritten character recognition is one of the difficult tasks of pattern recognition due to diverse writing styles. The problem becomes more severe if the characters are written in a cursive fashion with varying orientations. Also, there may exist printed characters of different shapes/fonts and sizes in a document image. In the current work, we have presented a novel convex hull based alignment technique for effective recognition of multi-oriented handwritten/printed characters. During this alignment process, the maximum distance from the convex hull centroid to character body is calculated and the distance is translated to Y axis along with all the points of the characters. Then the features are extracted from the aligned data. The experimental results of the current technique show notable improvement in recognition accuracy of isolated multi-oriented handwritten/printed digit patterns of Bangla and Devanagri scripts. As observed from the experimentation, the current technique enhances the recognition accuracy by 12.50%, 12.23%, 16.81% on handwritten Bangla, handwritten
Devanagari and printed Bangla digit datasets respectively.

Reference


Index Terms

Computer Science Image Processing

Key words

Convex hull Affine Invariant

Multi-oriented