Abstract

This paper presents two methods for enhancing recognition rate for Arabic typewritten digits. The first is node method that computes number of terminal nodes, and the second is right side method that studies the shape from the right side. These methods can recognize multi-font digits using two stages; each method produces specific results and then compares these results to obtain the final output. The recognition of multi-font typewritten is essential. It is a bit complicated to process, due to the difference in shape and size of the same digit. Therefore, the researcher used two methods for recognizing multi-fonts. The recognition system contains several steps, image preprocessing, which includes converting into binary, cropping the digit in single image with resize to 32 x 42 pixel, and thinning the shape of the digit to get the skeleton of the digit. Feature extraction includes number of terminal nodes from nodes method and two characters to specify the curve of right side of the shape. The recognition includes logical comparison between two vectors, one from each method. The proposed technique was implemented and tested. The experimental results showed that the proposed technique is efficient for recognizing typewritten digits. The results proved that the techniques work properly and are able to give recognition rate for 11 fonts up to 100%, or less for other fonts due to irregularity for some fonts or failing for one of two methods. The dataset contains multi-size and multi-fonts for the digits from 0 to 9.
References

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Index Terms

Computer Science  Pattern Recognition

Keywords

Numeral Recognition  typewritten digits  nodes method  right side method