Paper Title:
An absolute Optical Character Recognition system for Bangla script Utilizing a captured image
Paper Link:
https://ieeexplore.ieee.org/document/9689855

1 Summary

1.1 Motivation

The main purpose of the paper is to develop an efficient optical character recognition (OCR) system that can recognize Bangla script from captured images. It describes the methodology to recognize standard fonts and default sizes of Bangla text extracted from images taken by digital cameras or scanners.

1.2 Contribution

The paper contributes to the development of an eclectic OCR system specifically designed for recognizing and extracting Bangla text from captured images. It addresses the challenges posed by the complexity and interconnectivity of Bangla characters and presents techniques to overcome them.

1.3 Methodology

The methodology includes preprocessing, feature extraction from segmented characters, training a neural network and recognition. The proposed OCR system comprises several steps, including binarization, segmentation, noise cleaning, scaling, skew detection, and correction. Features are extracted from segmented characters like slope, centroid, bounding box etc.

1.4 Conclusion

The Feedforward neural network shows a success rate of approximately 99% on regular scanned/captured images with standard fonts and sizes in identifying Bangla characters using the proposed OCR system. The system demonstrates high accuracy in recognizing and extracting Bangla text from captured images.

2 Limitations

2.1 First Limitation

- The OCR system developed in the paper may fail to achieve better accuracy if the input image is skewed or rotated.

2.2 Second Limitation

- It does not apply any algorithm for skew detection and correction. The paper also acknowledges that better algorithms are needed to accurately detect and segment modifiers that are merged with characters.

Synthesis

The developed OCR system has various potential applications, including converting scanned books/texts into searchable digital format, language processing, assisting blind individuals, and data entry tasks such as extracting text from identity documents and receipts. The paper suggests future improvements to handle noisy/low-quality images, enhance segmentation

algorithms for better recognition of merged/complex characters, and expand the system to support other scripts like Hindi and Urdu.