

Image Text Detection and Conversion into Text Form

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Abstract - We are purposing a system by which we can detect the image text and convert into the text form for which we firstly apply **MSER** (Maximally Stable External Region) which is used as a method of blob detection in images, or to detect character candidates. After that some **text features** by which the text can be recognized. To recognize the text feature we apply some **geometric filtration** by which we can easily identified the character from the image. This is why all the character is formed by combination of geometric figures. After recognizing the text, reject the false positives i.e. background, figures, and many things expect character. Performing all these we apply **OCR function** by which Segmenting out the text from a cluttered scene helps with related tasks. Lastly after finding all these we have the text which is in text form which is easily modified and editable.

Key Words: Image Processing, OCR

INTRODUCTION

OCR optical character recognition is the recognition of printed or written text characters by a computer. This involves photo scanning of the text character. **Optical character recognition** (also **optical character reader, OCR**) is the mechanical or electronic conversion of images of typed, handwritten or printed text into machine-encoded text, whether from scanned document, a photo of a document, a scene-photo (for example the text on signs and billboards in a landscape photo) or from subtitle text superimposed on an image (for example from a television broadcast). It is widely used as a form of information entry from printed paper data records, whether passport documents, invoices, bank statements, computerized receipts, business cards, mail, printouts of static-data, or any suitable documentation. It is a common method of digitizing printed texts so that they can be electronically edited, searched, stored more compactly, displayed on-line. OCR can be used for a variety of applications. In

academic settings, it is oftentimes useful for text and/or data mining projects, as well as textual comparisons. OCR is also an important tool for creating accessible documents, especially PDFs, for blind and visually-impaired persons. Automatic text recognition is one of the hardest problems in computer vision. An essential prerequisite for text recognition is to robustly locate the text on the images. In real life there is soessential, a method by which the image text of newspaper, book and so on, converted into editable text for good visualization and avoidance of noise which is in the background of the text. The main purpose of this project is to recognize the image text and converted into the editable form. This reduces the human effort to write the same thing double to make the text in the digital form if that is in the image format. And it can only possible when we detect the text and recognize the text which is in the image. After detection and recognition we can easily convert in the editable format hence we can easily modify in the text.

Methodology

1. Take a color image (I) which contain the text from which we have to detect the text and convert into the editable form.
2. After taking the image in 'I' we apply the RGB to convert the color image into the gray image by the following operation:
$$(0.299*R+0.587*G+0.114*B)$$
3. This is due to bifurcation of text with their background according to the intensity of the image.
4. Next step is to apply the MSER by which we detect the text part of the image. For this we define the threshold value =1, to detect the major part of the image.
5. After detecting the text part we simply apply the bounding box property in which the text part bounded in a rectangular box.
6. Next step is to define the compactness which define the space between the two relative object

this is because to the detect the all the object and treated as lonely.

7. Aspect ratio is define for the ratio of the maximum(height, width) with the minimum(height,width) that tells the common property for all the character component about its height and width.
8. Solidity is defined to recognize the text width contains something or completely hollow by which we recognize the text in easy way.
9. Next step is to define the stroke width in which we calculate the distance between the widths of the character.
10. Eccentricity define the geometrical property of the text, this identify the character which help in comparison with the character present in the OCR function in matlab.
11. Last property of the text is extent which bounded into the rectangular box which defines the detected text.
12. 11 After that we apply the OCR function from the Matlab which compare all the detected text, after that it gives the output as editable text.

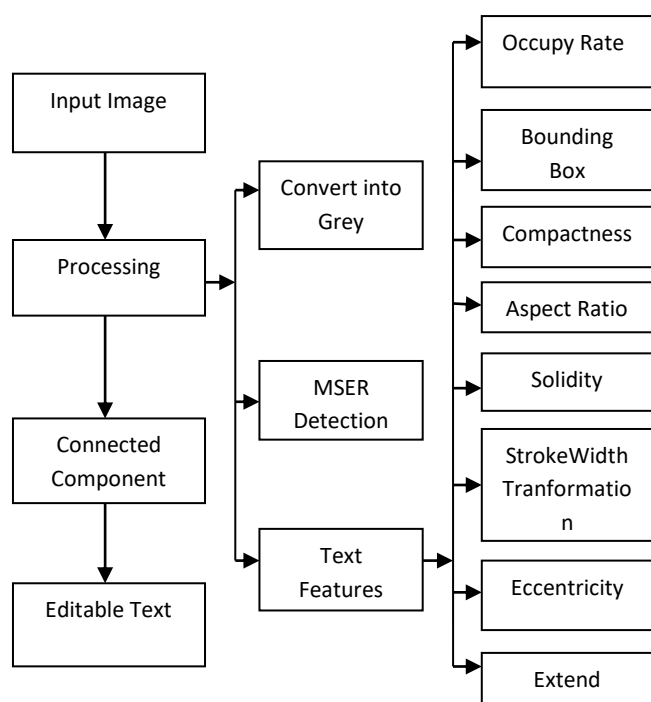


Fig 1. Flow Diagram of Propose System

CONCLUSIONS

From earlier we can only detect the title of the document or the vehicles number plate and so on only. Now by this system the whole document is easily detect and can be modified as we want, (text can be added, removed and many other). In this method we can detect the

approx. 80% of the image text. This project reduces the human effort to type a full document in conversion of digital form. And after the conversion we can easily modified as per our requirement.

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