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Scene Text Code Extraction

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ABSTRACT: Text characters and strings in natural scene can provide valuable information for many applications. Extracting text directly from natural scene images is a challenging task because of diverse text patterns and variant background interferences. This project proposes a method of scene text recognition from detected text regions. In text detection, the previously proposed algorithms are applied to obtain text regions from scene image. The project designs a discriminative character descriptor by combining several state-of-the-art feature detectors and descriptors. It models character structure at each character class by designing stroke configuration maps. The design is compatible with the application of scene text extraction in images. The project is developed to show the effectiveness of our proposed method on scene text information extraction from nearby objects. In addition, proposed system varying size of character images are saved in training set. Threshold value is set so that different size of character other than in training set can also be extracted from the given image. Any image type can be given as source image. Spaces between characters are also measured so that words can be extracted out. In addition, characters can be of any colors in the give image.

KEYWORDS: Scene text detection, scene text recognition, character descriptor, stroke configuration, text extraction.

I. INTRODUCTION

Now-a-days with the rapid growth of technology there are many camera based applications are available in different devices like tabs, cell phones, etc. Everyone is able to capture the images easily, but whenever we need to read the text presented in those images are very difficult. This is the main Problem for us. Since so many years, the text detection plays very important role in human life it can be helpful in the language translation and navigation. Text extraction plays a very important role for blind people when they want to read the text presented in the scene images. By these ways the text reorganization and detection can play vital role in humans every day and in future it can be part of so many computer applications. In scene text detection process, we apply the methods presented in our proposed work MSER based is adopted to extract text regions and segment text characters in image. In text recognition, for feature extracted by method of character descriptor that involve some key point detector. To recognize text, this system has designed a scheme to scene text recognition.

Text in the image contains useful information which helps to acquire the overall idea behind the image. Character extraction from image is important in many applications. It is a difficult task due to variations in character fonts, sizes, styles and text directions, and presence of complex backgrounds and variable light conditions. Several methods for text extraction from natural scenes have been proposed. If we develop a method that extracts and recognizes those texts accurately in real time, then it can be applied to many important applications like document analysis, vehicle license plate extraction, text-based image indexing, etc and many applications have become realities in recent years.

To extract text information from natural scene, automatic and efficient scene text detection and recognition algorithms are essential. However, extracting scene text is a challenging task due to two main factors:

- 1) Cluttered backgrounds with noise and non-text outliers.

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2) Diverse text patterns such as character types, fonts, and sizes.

The frequency of occurrence of text in natural scene is very low, and a limited number of text characters are embedded into complex non-text background outliers. Background textures, such as grid, window, and brick, even resemble text characters and strings. Although these challenging factors exist in face and car, many state-of-the-art algorithms have demonstrated effectiveness on those applications, because face and car, have relatively stable features. Text information is particularly interesting, because text can be used to easily and clearly describe the contents of an image. A variety of applications are found in recent studies that uses extracted text.

II. RELATED WORK

Scene text recognition has generated significant interest from many branches of research. However, many of the methods used for scene text detection and character recognition are predicated on cleverly engineered systems specific to the new task.

Text detection and recognition used to detect text in complex background images. It takes text image as input and then applying preprocessing methods on it to remove noise from image by converting color image to gray, which helps to efficient and accurate text identification from image which is input to OCR, within preprocessing if some part text data will loss them by thinning and scaling is performed by multiskeleton algorithm. Then we get connected text character from image. Then text recognition is done. The proposed framework is divided into three stages. Here applied text detection and text recognition to the image and recognize. The text detection uses to quickly extract text region in images with a very less false positive rate. To provide the recognition for accurate result proposed system to test the text image is segmented, assuming a different number of classes in the image each time. The block diagram for scene text extraction is shown in Fig.1 implies that the image edge can be detected by canny edge detector to determine the stroke width. Further it finds the text in the images after filtering and then mask the text and display the output.

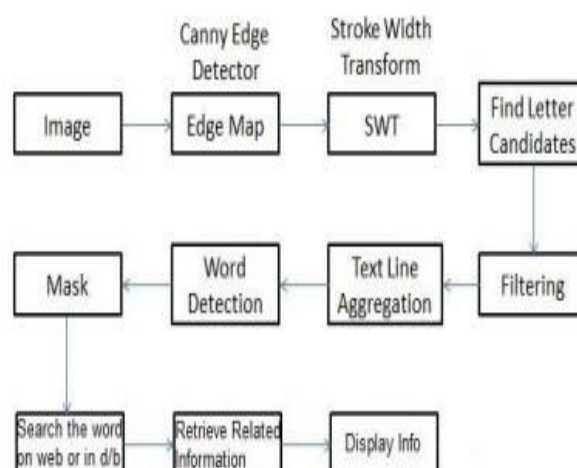


Fig.1-BLOCK DIAGRAM FOR THE SCENE TEXT EXTRACTION



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MODULE DESCRIPTION:

The following modules are present in the project.

1. TRAINING SET - ALPHABET IMAGE ADDITION
2. TRAINING SET - NUMBER IMAGE ADDITION
3. TRAINING SET - SPECIAL CHARACTER IMAGE ADDITION
4. SELECT IMAGE
5. SCENE TEXT RECOGNITION

1. TRAINING SET - ALPHABET IMAGE ADDITION:

The add alphabet form is used to add the alphabet character information in the application details such as character from the combo box control, image file path from the open file dialog control and image in the picture box control and store these information in the “images” table.

2. TRAINING SET - NUMBER IMAGE ADDITION:

The add number form is used to add the number information in the application details such as character from the combo box control, image file path from the open file dialog control and image in the picture box control and store these information in the “images” table.

3. TRAINING SET - SPECIAL CHARACTER IMAGE ADDITION:

The add special character form is used to add the special character information in the application details such as special character from the combo box control, image file path from the open file dialog control and image in the picture box control and store these information in the “images” table.

4. SELECT IMAGE:

In this module, the image file is selected. Using open file dialog control, the image file is selected. The image type may be any format (e.g., bmp, jpg, gif, tiff, etc). Both gray scale and color image can be selected.

5. SCENE TEXT RECOGNITION:

In this module, the selected image file is taken for processing. Then threshold value is set so that different size of character other than in training set can also be extracted from the given image. Spaces between characters are also measured so that words can be extracted out. In addition, characters can be of any colors in the give image. Using Character Skeleton and Character Boundary extraction, the character is recognized.

III. CONCLUSION

In this project it detects text regions from natural scene image and recognizes text information from the detected text regions. In scene text detection, layout analysis of color decomposition and horizontal alignment is performed to search for image regions of text strings. In scene text recognition, two schemes,



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text understanding and text retrieval, are respectively proposed to extract text information from surrounding environment. The proposed system character descriptor is effective to extract representative and discriminative text features for both recognition schemes. In addition, varying size of character images are saved in training set. Threshold value is set so that different size of character other than in training set can also be extracted from the given image. Any image type can be given as source image. Spaces between characters are also measured so that words can be extracted out. In addition, characters can be of any colors in the give image.

IV. SCOPE FOR FUTURE ENHANCEMENTS

The proposed method is to a demo system of scene text extraction in health care application . It also proves that the assumptions of color uniformity and aligned arrangement are suitable for the captured text information from natural scene. In future work, scene text recognition processes improve the accuracy rate of text detection and it is used to extend proposed system to word-level recognition. The accuracy and practicality of scene text extraction and design more representative and discriminative features to model text structure.

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