

Developing OCR Based Automatic Contact Number Retrieval System

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ABSTRACT:

Here, in this paper, we propose the character recognition method using optical character reader technology for the smart phone device. Camera within Android smart phone captures the image and then the OCR is applied according to language database. Here are, some language is added to the database, the character of the various languages can be detected easily.

People get trouble while saving a contact number in mobile device. Firstly they write contact number on paper after that they type a contact number in mobile device after that save this contact number in mobile device by typing it manually. This android application will solve the problem. Using this android application people can easily save a contact number in a mobile device. This android application captures the image using the camera after that it will extract the number from the whole image and will ask the user to save the contact number or not.

This paper discusses the idea & method of this application. It explains how to process on to save automatic contact number through smart phone when the user doesn't want to save a contact number through typing manner.

KEYWORDS:

OCR(Optical Character Recognition), character segmentation, character recognition.

INTRODUCTION:

Android platform has gained lots of popularity in recent years. Android is a mobile operating system which is open source & is operated on modified version of Linux Kernel.

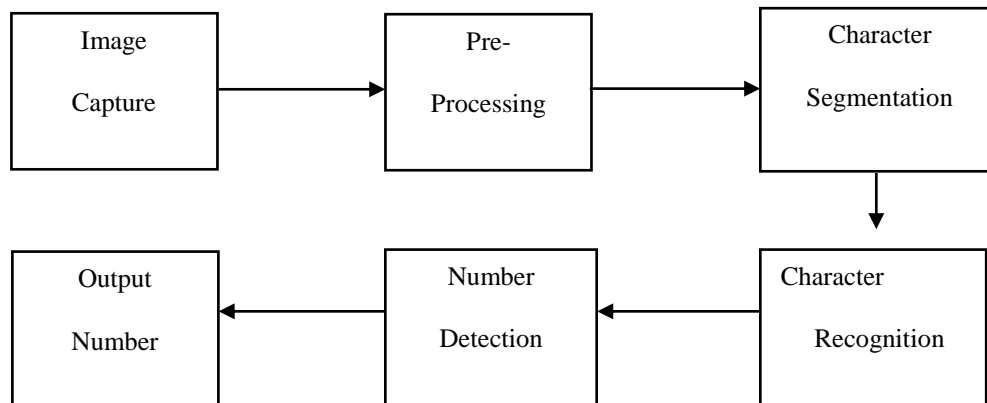
This can be installed on mobile devices, smartphones. Moving towards another main aspect of our system, an Image Processing is nothing but image enhancement followed by image restoration by applying some mathematical functions & algorithm on image. An image may be defined as a two-dimensional function, $f(x,y)$, where x & y are spatial(plane) coordinates, & the amplitude of f at any point of coordinates (x,y) is call the intensity or brightness or gray level of the image at this location (x,y) . When x , y , & intensity values of f are all finite, discrete quantities, we call the image a digital image.[5]

One of the first applications of digital image was in the newspaperindustry, when pictures were first sent by submarine cable between London & New York. Introduction of the Bartlane cable picture transmission system in the early 1920s reduced the image required to transport a picture across the Atlantic from more than a week to less than three hours. Specialized printing equipment coded pictures for cable transmission and then reconstructed then at receiving end.[5]

As we all know, keyboarding is the most common way of inputting data into computers& systems. This is probably the most time consuming process which requires more efforts.

Optical Character Recognition is the machine replication of human reading and has been the subject of research in recent years. It can be described as Mechanical or electronic conversion process of scanned images in which images can be handwritten, Typed or printed document. This is a process of digitizing printed texts so that they can be electronically searched and used in machine operations. This converts the images into machine-encoded or encrypted text that can be used in machine translation, text-to-speech and text mining operation. This paper presents a simple, efficient, and less costly approach to construct OCR for reading any image, in order to gain efficient and less computational cost oriented, OCR system.[2]

PROPOSED SYSTEM:



Following are the key aspects of our system:

1. The graphical user interface (GUI) :

The GUI is created using XML, as this is an android application. Through the GUI user will capture the image. At the back the application will use the camera of device in order to capture the image.

2. Pre-processing:

In this stage the image is pre-processed by using image processing operations. Such as converting the image to grey, filtering the image, etc.

Pre-processing is done in order to remove any noise available into image, so that the OCR engine/algorithm will be able to recognize the characters & numbers easily.

3. Optical Character Recognition (OCR) :

Segmentation: It is the process of partitioning a digital image into multiple segments (sets of pixels, also known as superpixels). Its goal is to simplify and/or change the representation of an image into something that is easier to analyze & more meaningful. This process is typically used to indicate objects and boundaries (lines, curves, etc.) from the given image or photograph. Also we can say that, image segmentation is the process of assigning a label to every pixel in an image such that pixels with the same label share certain properties.

Character Recognition: In this stage the character recognition algorithm is used in order to identify the characters from image which are segmented in segmentation phase.

Number Detection: Now, the numbers are separated from the identified characters.

4. Option for user whether to save contact or not: The system will ask the user whether he/she wants to save the contact or not. For this a separate algorithm is to be build & used.

CONCLUSION:

A method for contact number detection from captured image. This system reduces the human efforts. Using OCR technology each symbols, number and letters can easily and detected. This android application can be very useful for end user in order to save contact number. It saves time of typing of contact number manually by looking into photograph; hence the performance of read/write operation improved using this system.

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