Recognition of Street View Images and languages and converting it into user understandable format

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Abstract — *Camera-enabled mobile devices(Android) are commonly used as interaction platforms for linking the users virtual and physical worlds in commercial applications and numerous research, like serving an augmented reality interface. (OPSs) On-premise signs, a popular form of commercial advertising, are widely used in our living life. The OPSs usually exhibit great visual diversity, accompanied with complex environmental terms(conditions) (e.g., foreground and back- ground clutter). The language barrier among tourists is one of the major difficulty when traveling. The tourists can depend on mobile phone for traveling purposes.*

Android provides a translation platform for this base, performing 2 times faster than other algorithms. We first proposed an OPS data set, in which images of different businesses are collected from Googles Street View. Further, for addressing the problem of real-world OPS learning then recognition, we developed a probabilistic framework based on the distributional clustering, in which we proposed to exploit the distributional information of each visual feature as a reliable selection criterion for building discriminate OPS models. Our approach is linear, simple and can be executed in a parallel fashion, making it scalable and practical for large-scale multimedia applications.

Index Terms- world objects, street view scenes, object image data set, Pre-process, OPS, Smart phone, Text Extraction, Mobile platform, Segmentation, Translator

Keywords- *Distributed Clusters, Image Processing, Text Extraction, Translator, Augmented Reality*

I. INTRODUCTION

In our project we are creating a simple Android application for Android user. Image processing is the main task of this project in which we are doing simply detection of English keywords from image and translating it into Hindi (Devanagari) Language.

To develop android application basically We need android development tool and Related API's and SDK's. All the Development code will be in Java because Android supports java language. We are building this application for android version 2.0 and above so that maximum android devices will be able to install this application and will be able to run it for their own use. To develop an Android-platform based image translation application that is able to recognize the text present on images taken with a mobile phone camera and show the translation result back onto the screen of the mobile display.

1. TEXT DETECTION FROM IMAGE:

This is a common task performed on data (unstructured data or scenes). Unstructured data(scenes) are images that contain random or undetermined scenarios. For example, you can detect then recognize words(text) image to alert a driver about a road sign. It is not related to structured scenes, which contain known scenarios or scenes where the position of text is known beforehand

For detecting Text from images we are using the algorithm which will help to detect text from image by using the SQL lite database. For doing this operation we need a java compiler, java SDK's in addition we need the Android development tool for the Debugging the code on android device or AVD (Android Virtual Machine).

2. TEXT TRANSLATION:

There is some project which only detects text but we are going ahead, we are translating that text in other language.

First task is to detect and recognize text from image and then the text translation function will come for this task we simply need that detected English keywords. So that we can translate English key words in Devanagari Format.

3. RELATED WORK

To use cross knowledge learned from multiple tasks to improve the performance of image character recognition is the motivation of this study. Since CNN has strong tolerance to distortion, scale and shift, it has shown good performance on image character detection and recognition.

We performed a series of experiments in our work, to show that, after applying finite rules to the data before training, transliteration result gets increased. The format of our data during the experiment is in baseline format. Our idea behind using the baseline format is 'character-to- character' alignment. We perform training, tuning and testing using Matrix and Stanford Phrasal. Initially we start our work with a parallel corpus of English-Hindi where Hindi data is in UTF-8 notation. After performing experiments in UTF format, [2] we converted the target side data from UTF to wx format using the UTF8_wx converter to achieve transliteration. Then we move to our final experiment of applying finite rules to the data. As our target data is in wx-notation, we know that, if a word in source data ends with 'a' will definitely ends with 'A' in when transliterated in Hindi (wx-notation). So, our idea is applying one more 'a' to the end of these words, so that the machine will automatically understand when 'aa' encounters it have to transliterate to 'A' in target notation [2].

4. LITERATURE REVIEW

Sukanya Dutta et al. [1] used word level language recognition and spell check method to improve accuracy of translation. Mitali Halder et al. [2] applied finite rules during translation using Stanford Phrasal and Moses application. Shruti Mathur et al [3] used hybrid approach i.e. combination of rule based and statistical machine translation for translation. Nawrin Binte Nawab [4] created optical Bangla character recognition system using Chain code. Praseetha M. [5] used active contour model for segmentation of broken characters during translation. Burcu kir et al. [6] used artificial neural network for feature extraction. Sandeep Saini et al. [7] used parsing for clause detection and text simplification for improved Hindi to English translation. Rekha S. Sugandhi et al. [8] used parser to avoid grammatical mistakes during translation. Dr.M. Sundaresan et al. [9] developed a system to extract text from blobs in comic image using CCL, Mrs. Sushma R. Vispute et al. [10] developed an intelligent system to retrieve desired documents in Marathi using k-means clustering.

II. OBJECTIVES

1. Provide a user friendly and linear interaction platform for easy and fast operation and analysis of images
2. Alphanumeric and symbol recognition
3. Worldwide language simplification
4. Efficiency of segmentation phase in algorithm can be improved
5.Translation of keywords for user flexibility.

III. PROPOSED SYSTEM

3.1. PROPOSED MODEL

In this our work we are doing image processing for detecting and identifying the detected text.
We are converting image into grey scale format and then by scanning it we are detecting text for further operation.
Grey scale format is useful for identifying text so that multicolored image will be easily recognize. After recognizing the text, we are translating text in other language.
For translating the text, we are doing a simple operation in which every single text will be translated and will display on the screen.

3.2. METHODOLOGY

1. Capture the image.
2. Apply Grayscale to Image.
3. The image is scanned for first darker pixel. It will be top row. Then image is scanned from top to bottom until we find a line of lighter intensity pixels. The area between top and bottom is row of characters.
4. For a particular row, image is scanned from left to right until we get entire line from top to bottom with lighter intensity pixels. The pixel values from left to right and top to bottom will represent the single character.
5. The resultant character is represented in matrix with values 1 and 0. All darker pixels are marked with vale 1 and all lighter pixels are marked with value 0. (To get consistent matrix value the image character will be cropped.)
6. The data of learned set of characters will be maintained and the resultant matrix is classified for specific character by analyzing learned set of characters which will be data mining step.
7. Repeat step 4 to step 6 for all the characters in row.
8. Repeat step 3 for all rows of characters in image.

9. Maintain the string of characters obtained from above steps. Apply Translator algorithm to translate from one language to other.
10. Display the translated information on mobile device.

3.3. ALGORITHM

In our system, we are using Otsu's algorithm to perform clustering based image thresholding automatically and to reduce gray level image to a binary image. It is used for segmentation of image. The Otsu method requires computing a gray level histogram. In this we draw histogram of intensities of pixels in the image in order to find threshold intensity value. The pixels which have larger intensity than threshold value will turn black otherwise it turns into white. This will help us to obtain image with high resolution. Otsu method is type of global Thresholding in which it depends only gray value of the image, which is widely used because it is simple and effective.

3.4. ARCHITECTURE DIAGRAM
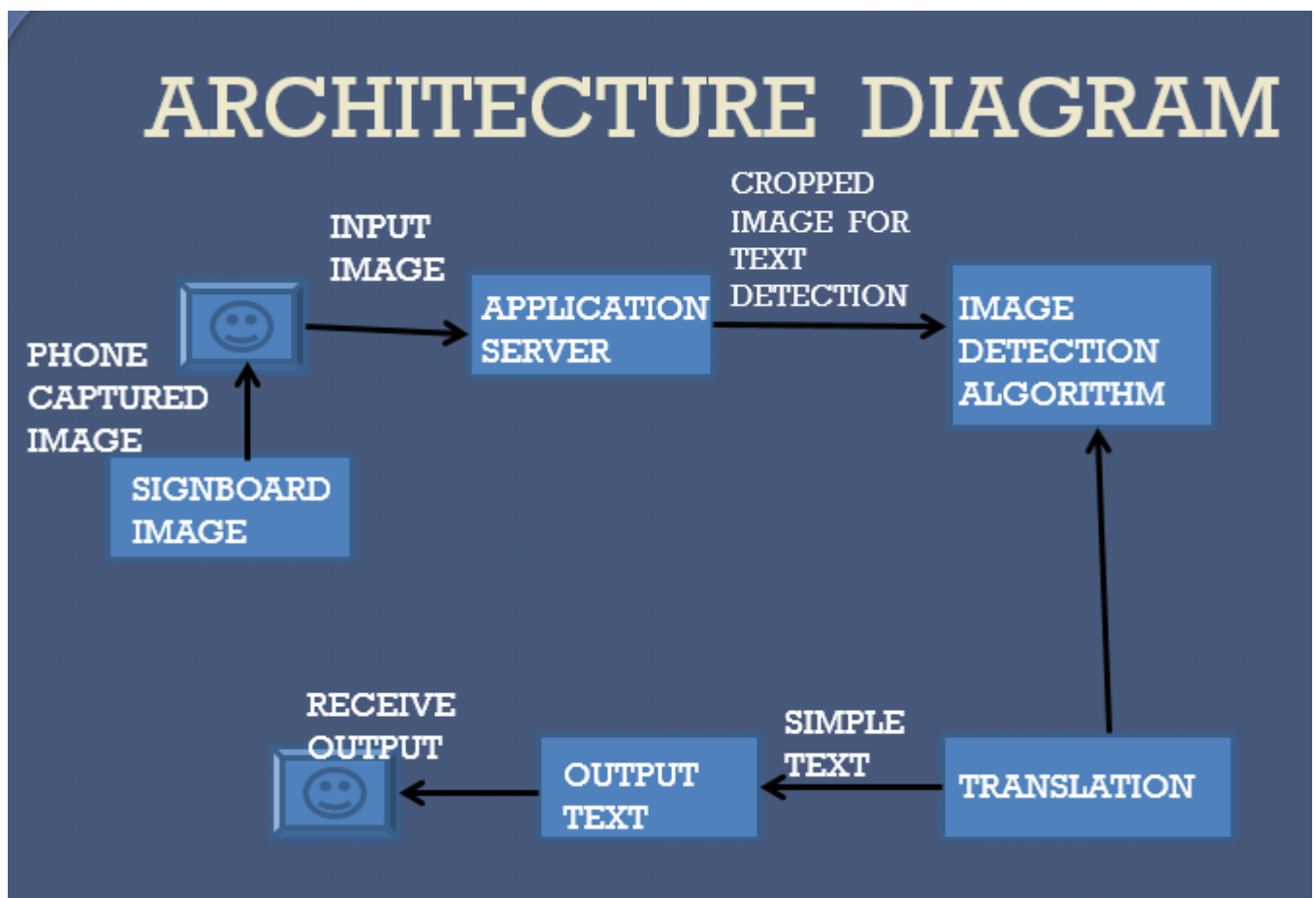
Description

Here, in the architecture diagram the image is being captured by the Android camera. After capturing image for further process it will be as input file. From the image the text will be get detected one by one, for detecting that text we have to convert image in grey scale format and then text detection will be done. Further process of recognizing the words the detected keyword will be get recognized by matching the matrix of pixels which we have generated after detecting the text. One by one the whole keyword will get detected and recognized after that the word translation process will get initiated. For translating English word in the Devanagari format we have to convert the detected keywords one by one till the the whole string will get converted. After converting the whole string, it will get displayed on the screen of the android phone.

IV. TEXT TRANSLATION

A. *Unicode Transformation Format (UTF):* It is the standard of universal character code to represent characters. UTF-8 is an alternative coded representation form for all the characters in Unicode while maintaining compatibility with ASCII.

B. *wx-Notation: wx notation is a transliteration scheme to denote a script in Roman script. It defines a standard for* the representation of Indian Languages in Roman script. These standards aim at providing a unique representation of Indian Languages in Roman alphabet (Akshar et.al., 1995).

UTF and wx-Notation these two will get use to translate English keywords into Hindi language by using their properties. Unicode will help to match the English keyword related to Hindi keyword. Like we are converting data UTF to wx-format.

V. CONCLUSION

In this work, we have proposed a probabilistic framework for learning then recognizing real-world OPSs from labeled images, in which technique of distributional clustering is exploited to benefit the selection of discriminative visual words and the construction of effective models of OPS, which is motivated by the communication theory
In this survey, the systems translation has been proposed which are useful for tourists. Character Recognition algorithm is used for extracting text from signboard images. The accuracy of Optical Character Recognition depends on Segmentation phase. In future efficiency of segmentation phase can be improved. As there are some projects which just detects text using OCR but we are doing some different thing that first detecting text and translating it into Devanagari format(language).

VI. REFERENCES

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