Recognition and Detection of Language on Inscriptions

Dr. C Parthasarathy, R.Sarvanan, M Sathish, U.Sai Sri Teja

***Abstract*— Ancient language Font Recognition is one of the Challenging tasks in Optical Character Recognition and Document Analysis. Most of the existing methods are for font recognition make use of local typographical features and connected component analysis. In this paper, Ancient language font recognition is done based on global texture analysis. Ancient language characters are different from current century's Ancient language character. This paper concentrates on the century identification of ancient language characters and converting them into current century's form using MATLAB. Recognition of ancient language hand written characters from inscriptions is difficult. In this paper, a method for recognizing Ancient language characters from stone inscriptions, called the contour-let transform, which has been recently introduced, is adopted. From the previous research works, it's noticed that Wavelet transforms are not capable of reconstructing curved images are perfectly. The contour-let transform offers a solution to remedy to this insufficiency. Contour-let transform is a 3D approach technique where as wavelet transform is a 2D technique. The characters from the input image are recognized through the clustering mechanism. Further the noise is present in the image is removed by fuzzy median filters. Neural networks are been employed to train the image and compare the data with the current century's character. hence a more accurate recognition of Ancient language characters from stone inscriptions is obtained.**

***Index Terms*— contour let, fuzzy median filter, clustering, neural networks.**

I. INTRODUCTION

In result of modern technology in the areas like researches and development more of governmental and nongovernmental organization converting paper documents into electronic documents likewise information in the stone inscriptions should convert to prevent our cultural heritage to this our paper concentrates on converting ancient language characters into modern Ancient language characters using the algorithm called as DETECT FAST FEATURE

INPUT IMAGE

Input Image is the main image which is used for the operation. That will be collected from the specific folder for the operation. Here we are collecting specific samples such as old Ancient language Script Image

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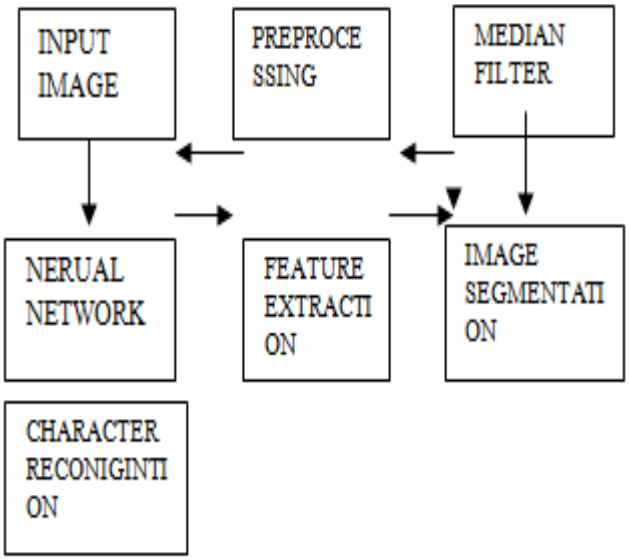
BLOCK DIAGRAM



II. MODULES

2.1. PRE PROCESSING

Pre processing is the operation at which the image is collected and processed for the further operation so that there would not be any distortions.

2.1.1 MEDIAN FILTER

In signal processing, it is often desirable to be able to perform some kind of noise

Median filtering is very widely used in digital image processing because, under certain conditions, it preserves edges while removing noise.

2.2 IMAGE SEGMENTATION

In computer vision, image segmentation is the process of partitioning a digital image into multiple segments (sets of pixels is also known as super pixels). The goal of segmentation is to simplify and/or change the representation of an image into something that is more

also meaningful and easier to analyze. Image segmentation is typically used to locate objects ,boundaries (lines, curves, etc.) in images. More precisely, image segmentation is the process of assigning a label to every pixel in image such that pixels with the same label share certain characteristics.

The result of image segmentation is an set of segments that collectively cover the entire image, or a set of contours extracted from the image (see edge detection). Each of the pixels in an region is similar with respect to some characteristic or computed property, such as color and intensity, or texture. Adjacent regions are significantly different with respect to the same characteristic(s). When it applied to stock of images

2.3 Feature Extraction

In machine learning and in image processing, feature extraction starts from an initial set of measured data and builds derived values (features) intended to be informative and non redundant, facilitating the subsequent learning and generalization steps, in some cases leading to better human interpretations to its Feature extraction is related to dimensionality reduction.

When the input data to an algorithm is too large to processed and it is suspected to be redundant (e.g. the same measurement in both feet and meters, or the repetitiveness of an images presented as pixels), then it can be transformed into a reduced set of features (is also named features vector). This process is called feature extraction. The extracted features are expected it to contain the relevant information from the input data, so that the desired task can be performed by using this reduced representation it instead of the complete initial data.

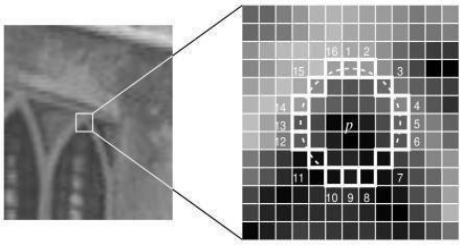
III. ALGORITHM

Feature Detection using FAST

1.Select a pixel p in the image in which is to be identified as an interest point or not. Let its intensity be I_p.

2.Select appropriate threshold value t.

3.Consider an circle of 16 pixels around the pixel under test. (See the image below)



4.The choice of pixels is not an optimal because its efficiency depends on ordering of the questions and distribution of corner appearances.

Results of high-speed tests are thrown or drag away. Multiple features are detected adjacent to one another.

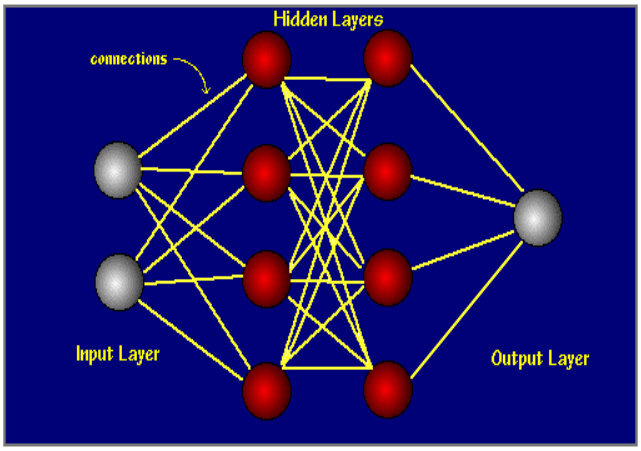
First 3 points are addressed with an machine learning approach. Last one is addressed using non-maximal suppression.

5.Now the pixel p is a corner if there exists an set of n contiguous pixels in the circle (of16 pixels) which are all brighter than $I_p + t$,or all darker than $I_p - t$. (Shown as white dash lines in the above image). n Was chosen to be 12.

A **high-speed test** was proposed to remove a large number of non-corners. This test examines only the four pixels at 1, 9, 5 and 13 (First 1 and 9 are tested whether they are too brighter or darker. If so, then checks 5 and (13). If p is a corner, then at least three of these must all be brighter than $I_p + t$ or darker than $I_p - t$. If neither of these is the case, then p cannot be a corner. The full segment test criterion can be applied to the passed candidates by examining all pixels in the circle. This detector in itself exhibits with high performance, but there are several weaknesses: It does not reject as many candidates for n < 12.

IV. NERUAL NETWORKS

Artificial neural network is a machine learning approach that models human brain and consists of a number of artificial neurons. In neuron ANNs tend to have fewer connections than biological neurons. each neuron in ANN receives a number of inputs. an activation function is applied to these inputs which results in activation level of neuron (in output value of the neuron).knowledge about the learning task given in the form of examples called training examples.



CONCULSION

In this we presented paper we have recognize Ancient language character of 11^{th},13^{th} using structural properties such as the horizontal lines, vertical lines ,loops by finding its maximum quality points using algorithm called as detect fast feature .we trained our system with the small amount of database in our future work concentrates on recognizing Ancient language letters across various century

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