

Currency Recognition System Using Image Processing

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Abstract

The Recognition of the currency is the most difficult for the world today. In India Reserve bank issue notes. Reserve Bank changes the design of the note at every some specific interval and to recognize the note for common people is a big burden. Reserve bank have several techniques to detect fake currencies. Technology is increasingly rapidly these days. We propose a model for automated currency recognition using image processing. Proposed system are based on image processing and the process is automated and durable. Many of the Detection Systems are present in the market but they are very cheap and we are making a currency detection system which will extract the currency features and compare the features of original note at very low cost. With the help of Python this project is going to execute. Future works on this project is mainly on making this system to being detect fake currencies.

Keywords: Currency Recognition System, Image Processing.

I. INTRODUCTION

According to survey all currencies around the world look different. For instance color and pattern is same but the paper is different. Unlike the ancient times, The countries have enhanced their trade and commerce in all sorts of levels. People who are working places like money exchange have to tell differ between currency types and that is not an easy job. They are required to remember the symbol of all the country in the world. This may cause wrong recognition of the currencies. To get the knowledge of each currencies by the banks has been vastly important. Thus, the need for a foolproof, efficient automated system to aid in their work. The aim of our system is to make detection of currencies very easy and fast. Development of automated system for banking services. The recognition of paper currency is very important in many applications such as automatic vending machine.

We are using the technique of image processing. This approached is already altercate with MATLAB which will distinguish all the features of currency. The main

purpose of image processing is to changing the character of an image in order to renovate its pictorial information for human gloss.

II. Overall Description

Information of colour and shape we have used in this. This system is using image processing. For recognition of currency that involve pattern, color based and texture. So, we have used digital image processing techniques to find scope of benefit. This paper extracts and spots robust highlights from bank notes. Python plays a step to implementation of this paper which is very important for industrial development. The technique we have to give example of the model is SEK and RMB. Matching of template is often used to classify banknotes.

Proposed system

The purpose of this proposed system is to help the common people to recognize the currency of any country and also that the currency is real not fake. Our proposed system will help to find the exchange rate, currency value and currency name also with the inserted currency image. In this proposed model system extract the specific quality of the paper currency like various powerful parts of currency note (like identification point, latent image, etc). Denomination of currency can be known with the help of identification point. This point of currency can help to recognize fake or genuine. This proposed model is developed to recognize different currency notes 5, 10, 20, 50, 100, 200, 500, 2000 rupees.

Related Work

From decades it's been lot of work has been to recognize paper currencies automatically. A particular point method of extraction used to equal data extraction from a particular part of a Dollar note representing same texture

The first method which was proposed for currency recognition system was in early 90's. But

in that time their dimension does not take the certifications of the currency in account. Therefore, it has been assumed that the notes are in good condition and images as desired are obtained. It is defined as the proposed model need that the input taken in the model should be in the predefined angle and distance.

In the paper [2] this method is almost similar to the previous method discussed. In this method system freeze few features of the notes and similitude them with the database which is already stored in order to discriminate the note. But this method takes lot of time and parameters. Such parameters are height, width and this also apply Prewitt method and Canny Edge Detection to obtain the other parameters which will help in calculating the Euclidean distance.

In the [3] this method is developed in a way that before extracting features of recognition it first processes the input image and after processing it convert the image into the gray scale for uniformity. This feature basically focuses on diagonal vector and then compared with a set of values from the database that will help in identifying the currency.

So, we have already talk about various previous model and their function and drawbacks. There has been previously lot of model has been proposed. We are learning from their model and try to learning from their mistake and making our proposed model more efficient. We aim to build our system in a way that it is easily scalable and gives an accurate result.

III. Relevance

The relevance of the project shows how much the project is efficient and its output. Our relevance is to identify the fake note which is spreaded all over the world and our main goal is to use image processing technique and identify original currency. Our project is quite similar to currency recognition system using neural network. Now a day's people recognize the currency by manually which is sometime is not recognize by them correctly. So, the system can recognize all kind of notes and currencies which is useful to common people.

The Abstract

The recognition of currency The Recognition of the currency is the most difficult for the world today. In India Reserve bank issue notes. Reserve Bank changes the design of the note at some specific interval and to recognize the note for common people is a big burden. Reserve bank have several techniques to detect fake currencies. Technology is increasingly rapidly these days. We propose a model for automated currency recognition using image processing. Proposed system are based on image processing and the process is automated and durable. Many of the Detection

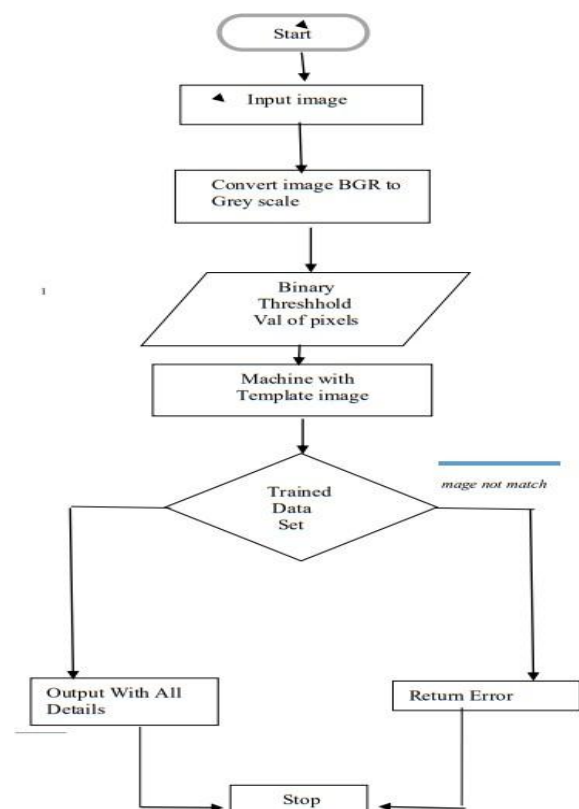
Systems are present in the market but they are very cheap and we are making a currency detection system which will extract the currency features and compare the features of original note at very low cost. With the help of Python this project is going to execute. Future works on this project is mainly on making this system to being detect fake currencies.

IV. Objective of Application

To recognize original currency note using image processing. System do the comparison between the image of currency and the data stored in the original currency data. This is the cheaper, accurate and easily accessible and gives accurate recognition of the currency and it also develop user friendly web application of currency recognition system. This also accessible for common people who can access this system very easily.

The proposed model consists of many parts. In the first note are inputted and then converted into BGR to Grey scale and then converted image is checking to binary, threshold, Val of pixels then system checks the machine with the template image.

After than the trained data set scan the currencies and if image not matched then it will return error and if matched then it will show output with all the details and then exit. Figure 1. Is the flow chart of proposed model.



Literature Survey

Main purpose of the system is to provide fake currency detection facility. There are lots of machines are available that helps the people to recognize different features of currencies. But for most working staffs in money exchange have to keep a lot of different features and anti-fakes label for different commonly-used currencies. However, everyone has a handbook that about the features and anti-fakes labels of come commonly- used currencies. No one can ever be 100 percent confident about the manual recognition. So, our purpose is to detect currency with accurate results without any interference also our proposed system will save time to recognize currency by detecting fake currency in less time. Existing systems uses optoelectronic device to produce the signal from the light refracted by the banknote. There are many currency recognition machines are available in current market through which currency can be recognize whether by using image processing technique or Existing currency recognition systems are mainly based on processing of image using image processing techniques. Some system uses Gaussian function in hidden layer and output layer of NN in the place of sigmoid function. System shown that the Gaussian function is more effective than sigmoid function for the recognition of known features and rejection of unknown patterns.

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