ENGINEERING IN ADVANCED RESEARCHSCIENCE AND TECHNOLOGY

ISSN 2352-8648
Vol.03, Issue.01
June-2022
Pages: -416-425

A NOVEL METHOD FOR DETECTON OF FAKECURRENCY USING HYBRID APPROACH

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ABSTRACT:
India is a country where it consists of different types of coins and currencies. Each currency has its own denomination and using that we can identify currency easily. There are many techniques for identification, classification, recognition of currencies which may also consist of fake currencies detection. Using digital image processing methods all these can be done, Low – resolution image will get converted into a high-resolution image. MATLAB is the platform used here.
Keywords-High-resolution image, Image processing, Low-resolution image

PURPOSE: Counterfeit notes are one of the biggest problems occurring in cash transactions country like India, it is becoming big hurdle. Because of the advances in printing, scanning technologies it is easily possible for a person to print fake notes with use of latest hardware tools. Detecting fake notes manually becomes time-consuming and untidy process hence thereis need of automation techniques with which currency recognition process can be efficiently done. Many techniques have been proposed with the use of MATLAB, feature extraction withHSV color space and other applications of image processing. We have implemented a fake note detection unit with MATLAB algorithm.

EXISTING SYSTEM: From the decade of evolution, trading has become one of the fundamentals for the existencein the society as far as we know. Thus, it has become the key factor for efficiently utilizing the resources thereby strengthening to progress and survive. So, for those human beings developedmoney as a medium and it consists of plenty of coins and currencies. In that counterfeiting of currencies makes a lot of issues while transaction. For detecting the currencies as well as identifying the denominations of the currencies using image processing is a great way. In previous papers and all the authors introduced various methods to identify, classify and to verifywhether the currency is fake or not using the image processing algorithms like feature extraction, pattern recognition, neural networks, FAST,SIFT and LBP etc...

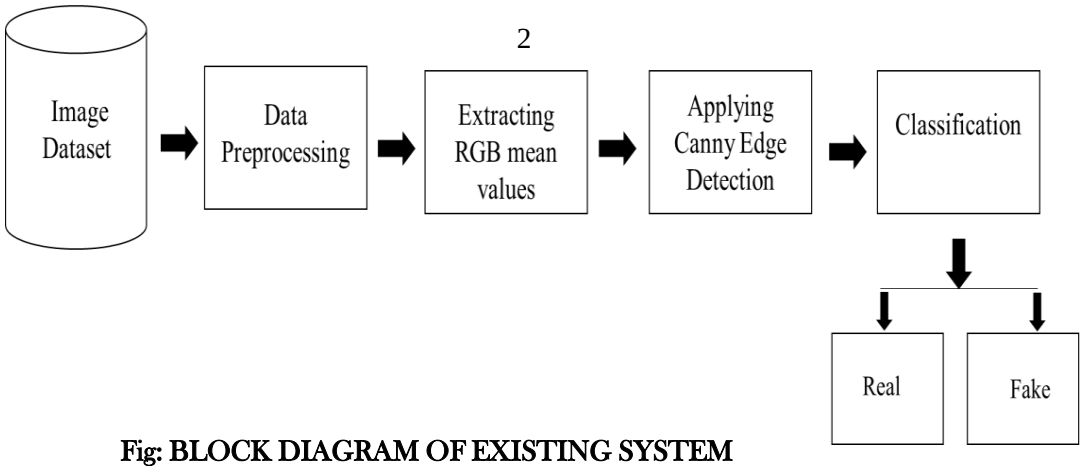


Fig: BLOCK DIAGRAM OF EXISTING SYSTEM

PROPOSED SYSTEM:

This proposed system will be useful in identifying an unclarified image of a currency and itsdenomination.

In this proposed framework we are finding another way to deal with recognize monetary standards utilizing a picture-based system super-resolution. It will pre-process the pictures and arrange the prepared arrangement of information and it will distinguish monetary forms. This paper proposes a convenient method for Indian currency identification system. The proposed methodology distinguishes category by extricating highlights like multiple colors and the text in the currency. Super-resolution is a novel methodology in this field. As we probably aware currencies and monetary standards are a piece of our life. In that a few currencies might be of fake and in monetary forms some might be of phony or wrecked. So, to recognize or distinguishing the real ones and grouping them as indicated by the norms should be possible utilizing picture preparing systems is the thing that says here MATLAB is the tool used for it.

HYBRID APPROACH:

Combination of LBP & PCA is known as hybrid approach

LOCAL BINARY PATTERNS:(LBP)

It encodes the local texture information which you can use for tasks such asclassification, detection and recognition.

PRINCIPAL COMPONENTS ANALYSIS:(PCA): It is process of computing the principal components and using them to performa change of basics on data .It is used in exploratory data analysis & for making predicative models

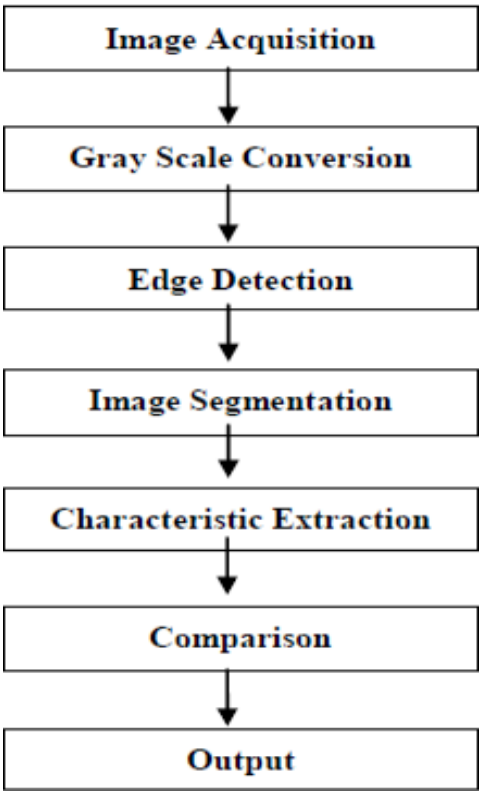


Fig: BLOCK DIAGRAM OF PROPOSED SYSTEM

IMAGE ACQUISITION:

Image acquisition is to acquire a digital image. image acquisition is an action of retrieving image from an external source for further processing. It's always the foundation step in the workflow since no process is available before obtaining an image.

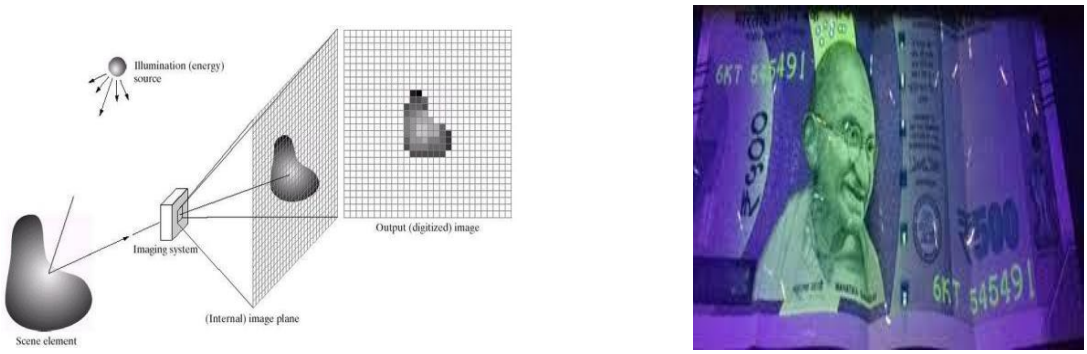


Fig: IMAGE ACQUISITION

GRAY SCALE CONVERSION:

An intuitive way to convert a color image 3D array to a grayscale 2D array is, foreach pixel, take the average of the red, green, and blue pixel values to get the grayscale value. This combines the lightness or luminance contributed by each color band into areasonable gray approximation.

Fig: GRAY SCALE CONVERSION

EDGE DETECTION:

Edge detection is an image processing technique for finding the boundaries of objects within images. It works by detecting discontinuities in brightness. Edge detection is used for image segmentation and data extraction in areas such as image processing, computer vision, andmachine vision.

Fig: EDGE DETECTION

IMAGE SEGMENTATION:

Image segmentation is a method in which a digital image is broken down into various subgroups called Image segments which helps in reducing the complexity of the image to make further processing or analysis of the image simpler.

Fig: IMAGE SEGMENTATION

CHARACTERISTICS EXTRACTION:

Characteristics extraction is a part of the dimensionality reduction process, in which, an initial set of the raw data is divided and reduced to more manageable groups.So when you wantto process it will be easier.

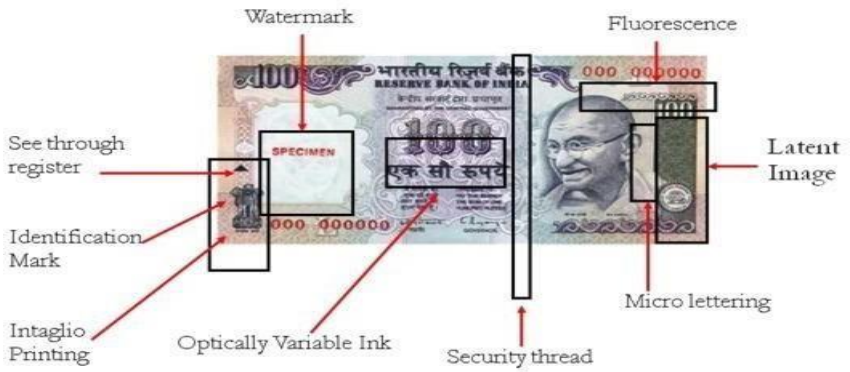


Fig: FEATUES OF A NOTE

SOFTWARE REQUIREMENTS:

Operating System	:	Windows7 above versions
Coding Language	:	MATLAB

HARDWARE REQUIREMENTS

Processor	:	i3 & any latest versions.
Hard Disk	:	500 GB.
Input Devices	:	Keyboard, Mouse
RAM	:	8GB

ADVANTAGES:

1. High accurate
2. Very simple
3. Requires less hardware
4. Low processing time
5. Consumes low power

APPLICATIONS:

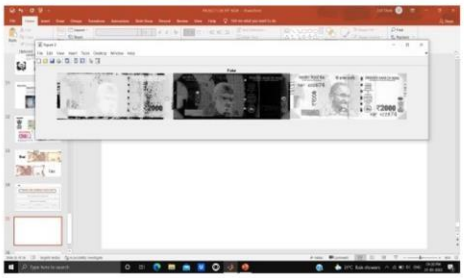
1. Authentication Purpose.
2. Duplicate Identification.
3. Banking Purpose.
4. Large Amount Of Money Transactions.

FEATURES IN CURRENCY NOTES:

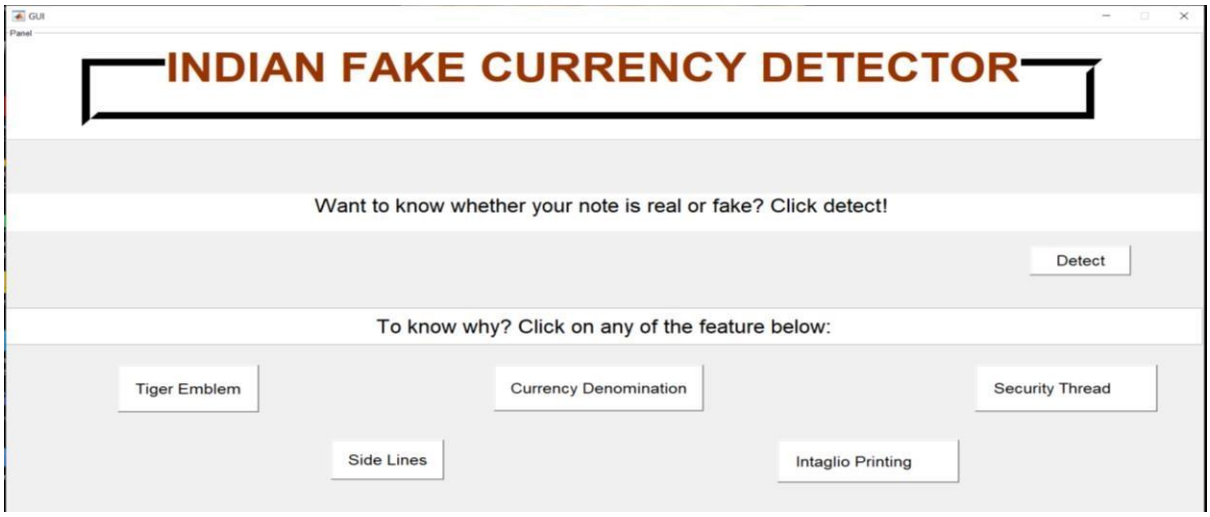
- ❖ Tiger Emblem
- ❖ Currency Denomination
- ❖ Side Lines
- ❖ Intaglio Printing
- ❖ Security Thread

FEATURES:

OUTPUTS:



GUI:



CONCLUSION:

It is conclude that ,In proposed method, fake Indian currency is detected by four tasks namely Image acquisition, extracting mean of RGB values, data preprocessing, applying canny edge detection and comparing with the original image.

Firstly, we acquired the image from the user which we want to test whether it is fake or real. After acquiring the image, the mean of RGB values is computed. Later the image is preprocessed and edge canny detection algorithm is applied on it. After applying edge cannydetection, the image is segmented and afterthat it is compared with the real imageto know whether it is real or fake.

FUTURE SCOPE:

Further, we will implement this algorithm for different currencies as well and for different currency values as well. We will try to classify on different factors.When we take input image from outside the training folder then it is not giving the 100% accuracy. We can overcome this problem by improving the system. In future many countries currency can be detected.

REFERENCES:

1. Rajasekar an, C., Akshaya, P., Gokilavani, S., Gokul raja, V., & Hari, B. P. (2018, March).Smart digital hundi for identification of Indian coin and currency using Image processing. In2018 Second International Conference on Electronics, Communication and Aerospace Technology (ICECA) (pp. 1181-1184). IEEE.

2. Jain, V. K., & Vijay, R. (2013). Indian currency denomination identification using imageprocessing technique.

3. Penha, N., & Masoumi, H. (2017). Banknotes detected using Image Processing Techniques.

4. Amir sab, S. A., Mudassir, M., & Ismail, M. (2017). An Automated Recognition of Fake or Destroyed Indian Currency Notes. International journal of advance scientific research andengineering trends volume, 2(7).