

Detection of Fake Currency Using Image Processing Techniques

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Abstract- Many countries are affected by the matter of fake notes. Indian is one among them. With the improved technology, anyone can print fake notes. These notes are produced without legal sanction of the state and continues production of such kinds of notes can degrade countries economy. When such counterfeited notes are produced and circulated, it becomes impossible for ordinary citizens to distinguish whether the money is real or fake because they differentiate according to physical appearance. The biggest challenge for many countries like India is the detection of fake currency. Even if banks and other big organizations have automatic machines designed to identify counterfeit currency notes, ordinary people can hardly differentiate between them. Nowadays recognition of fake currency has become challenging issue for many researchers. The identification involves many steps like edge detection, feature extraction, image segmentation, image acquisition, grayscale conversion, and comparison of images. This paper provides some related works of paper-currency recognition and has explained the spread of various currency recognition systems. Choosing the right feature would improve overall system performance. The goal of this work is to review previous papers and literature, identify the benefits and disadvantages of every method.

Keywords- Fake currency detection, Image Processing, Matching Techniques.

I. INTRODUCTION

In today's new digitalization environment, people are bounded by technology, and that technology is rapidly developing. Of course, such inventions make life much easier for us. People can now complete their tasks with minimal effort, which is possible due to technological advancements. However, some people are abusing the benefits of such technologies to achieve their nefarious goals. There are numerous examples of this kind all around us. One of the most prominent examples of this is a counterfeit note. Counterfeit currency is described as currency produced without the government's legal approval. To print counterfeit money, the dishonest people use the most up-to-date scanning and printing techniques. The development of such counterfeit money has an effect on any country's economy. Indian

currency is also the portion of such unwanted things. So the common people face a huge problem in differentiating the real and fake currency.

Watermarking, latent picture, micro lettering, see through register optically variable connection, security threads, intaglio printing, fluorescence, identification mark and legal protections against counterfeiting are some of the techniques for identification implemented by many researchers.

II. WORKFLOW DIAGRAM

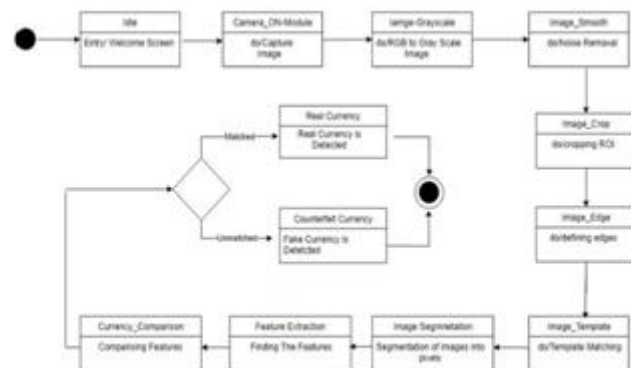


Fig. 1 Workflow Diagram

These attributes may include watermarking, latent image, micro lettering, see-through register, optically variable connection, security threads, intaglio printing, fluorescence, identification mark and legal protections against counterfeiting. The authors used a variety of image extraction methods, but it must be a good and feasible image extraction in order to consider accurate data as input . The workflow shown in fig 1

1. SYSTEM ARCHITECTURE

The Application Based Fake Currency Detection. This is software based application.

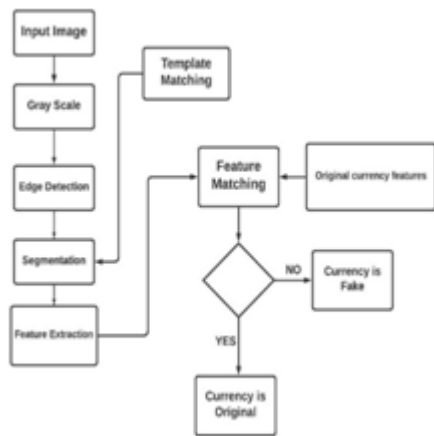


Fig 2 SYSTEM ARCHITECTURE

Input:the web cam or phone cam will be used to take the input image by user.

Input processing: Further the input will be moved into the system for processing where in the image goes through an algorithm(C.N.N)and series of application.

Template Matching: the template matching will then be used to find the small parts of an image that is needed to be compared with a dataset image. It is basically used to assure quality control of image.

2. IMPLIMENTTION

In this section , the detailed designed and implementation of the system are presented.

A.Software Login and Register interface :This part of the system gives the to convenient way to register and login himself.



Fig 3 home page

B.Software Login interface:In this login interface we can see rushi can login. If the username are correct then it will login and show the pop up of login successfully. It takes username and password for login



Fig 4login page

C.Software Registration interface : In this interface we can see that Rushikesh Phapale can register themselves by using the name, address, email, phone number, user name, password .The email and password is the important credential to login the user again. After the registration successfully completed the registration process.



Fig 4ragistraton page

D.Implementation: In this interface we can see that first we have to select one currency image as a input. Next step click on image processing after image processed then click on CNN prediction button After few sec it will gives you the final result and execution time.



Fig 5 .Implimentation

III. CONCLUSION

Currency use is a necessity for survival and hence it is always necessary to keep in track of its originality. Paper currencies are used much more in India and hence a system to detect the fake currency is needed. As the new currencies are used in the market, the proposed system seems to be useful to detect the currency to be genuine or not. This system compares more features for feature extraction than other proposed systems. It also shows where the differences are in the currencies instead of simply displaying the result. This system can be further implemented for foreign currencies like Dollars, Euros, Taka, etc. as a future scope

REFERENCES

- [1] V. Sharan and A. Kaur, "Detection of Counterfeit Indian Currency Note using Image Processing", International Journal of Engineering and Advanced Technology, vol. 9, no. 1, pp. 2440-2447, 2019.
- [2] V. Saxena and Snehlata, "An Efficient Technique for Detection of Fake Currency", International Journal of Recent Technology and Engineering, vol. 8, no. 3, pp. 1298-1305, 2019.
- [3] Snehlata and V. Saxena, "Identification of Fake Currency: A Case Study of Indian Scenario", International Journal of Advanced Research in Computer Science, vol. 8, no. 3, pp. 213-218, 2017.
- [4] Yanyan Qin, Hongke Xu, Huiru Chen, "Image Feature Points Matching via Improved ORB", ICPIIC, Vol. 14, pp. 204-208, 2014.
- [5] S. Kaur, S. Baghla and S. Sunil, "Enhancement of Sift algorithm to check authenticity of Indian Currency", International Journal of Computational Intelligence Research, vol. 13, no. 5, pp. 946-953, 2017.