



“FAKE CURRENCY DETECTION USING DEEP LEARNING”

Rohan Nashte, Harshada Patil, Sarthak Deshmukh, Shruti Aglave

Guided By

Prof. P. S. Gawali

Sinhgad Academy Of Engineering

Abstract:

Counterfeit money notes are expanding step by step, to beat this we proposes an exceptionally accommodating and productive framework to identify the phony cash. For distinguishing the phony cash note is finished by including the quantity of breaks in the string line. For anticipating the note is genuine or counterfeit based on number of interferences. On the off chance that the quantity of interference is zero, assuming it is genuine note in any case it is phony. And furthermore we compute the entropy of the cash notes for the effective discovery of phony money note. Counterfeit money recognition is a major issue around the world, influencing the economy of pretty much every nation including India. Money duplication otherwise called fake cash is a weak danger on economy. It is presently a generally expected peculiarity because of cutting edge printing and checking innovation. The potential arrangements are to utilize either synthetic properties of the money or to utilize its actual appearance. The methodology introduced in this paper depends on actual appearance of

the Indian cash. Profound learning calculations have been embraced to remove the which have been taken on as security elements of Indian cash. Consequently, we propose a more easy to use and versatile answer for this issue in type of a work area application.

Keywords- Currency Detection, Convolutional Neural Network, Neural Network, Deep Learning

I. INTRODUCTION

Today in the cutting edge digitalization world, we are encircled by different advances and these innovations are filling step by step in quick way. Obviously, such advancements had made our life exceptionally simple and more effective, and as yet making as well. Today individuals can take care of their responsibilities with least endeavors and such things are just conceivable as a result of the innovation. Be that as it may, certain individuals are using the benefits of advancements to satisfy their own terrible purposes. There are loads of such models that are encircled around us. Creation of Counterfeit Currency Notes is perhaps the main instances of such thing.

Creation of money without the lawful assent of Government is named as Counterfeit cash. Business regions like the banks, shopping centers, gems stores, and so on have colossal measures of exchanges consistently. Such places might have the option to manage and think that it is doable to purchase machines that utilization UV light and different strategies to distinguish the legitimacy of the cash. Be that as it may, for commoners it is extremely challenging to recognize just by seeing whether the money is phony or veritable and they might confront misfortunes particularly during bank stores or exchanges.

II. Literature Survey

Vipin Kumar Jain, Dr. Ritu Vijay [1] stated that, The paper [1] used Fraud detection technique by using performance metrics. Neural networks and model based reasoning are the two methods behind this technique. The general attributes like identification mark and serial numbers of currency are extracted. Denomination of currency is known by identification mark. Next generation intrusion detection expert system is used in this paper by using the real time and batch technique.

P. D. Deshpande and A. Shrivastava et al. [2] this paper [2] extracts multiple features from Indian currency and uses them for fake currency detection. The image was acquired using image acquisition device. The security features were extracted using various image processing algorithms and then template matching was done to identify fake currency. We will be overcoming this problem by using different parameters which will be enough sufficient to recognize the difference between fake and original currency notes, this will be implemented using image processing techniques.

K. Sawant and C. More [3] proposed that an approach to detect fake note using minimum distance classifier technique. In this paper, the extract an ID mark and latent image and compute the Euclidean distance between the test sample and train sample. The Fourier descriptor is used for the describe the note boundary.

B. Zende, B.Kokare [4] stated that describe a fake note detection system automatic recognition of Indian currency

security feature based on MATLAB system. They are so many step including in this process is feature extraction, image segmentation, edge detection, bit plane slicing and comparison of image. In this paper extract some many feature watermark Detection, Security Thread Detection, checking currency series number, identification mark and sees through register. Here, they propose a GUI platform to check the currency is fake or real.

III Proposed Method and Algorithm

A. Proposed Methodology:

In a proposed system, we are proposing experiment on genuine or real fake currency with limited set of supervised data.

We are proposing a Convolutional neural network based multimodal classes risk prediction model for limited notes with higher accuracy. We are going to solve accuracy issue in diagnosis of genuine or fake with accurate stage predictions.

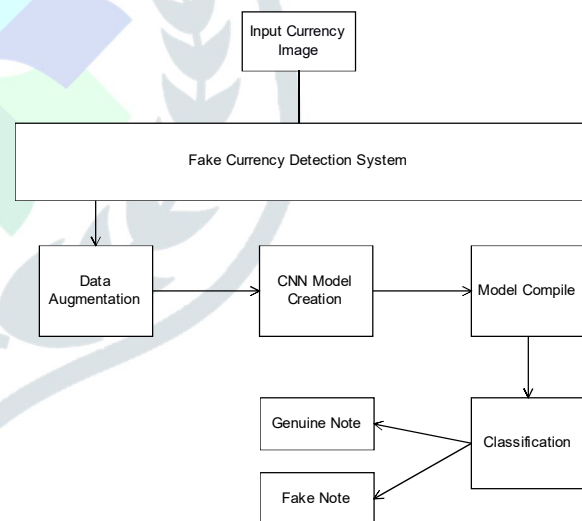


Fig1. Proposed Architecture

B. Algorithms

1. Convolutional Neural Networks (CNN)

Convolutional Neural Networks (which are additionally called CNN/ConvNets) are a kind of Artificial Neural Networks that are known to be tremendously strong in the field of distinguishing proof just as picture order.

Four main operations in the Convolutional Neural Networks are convolutional layer, max pooling layer, relu and fully connected layer.

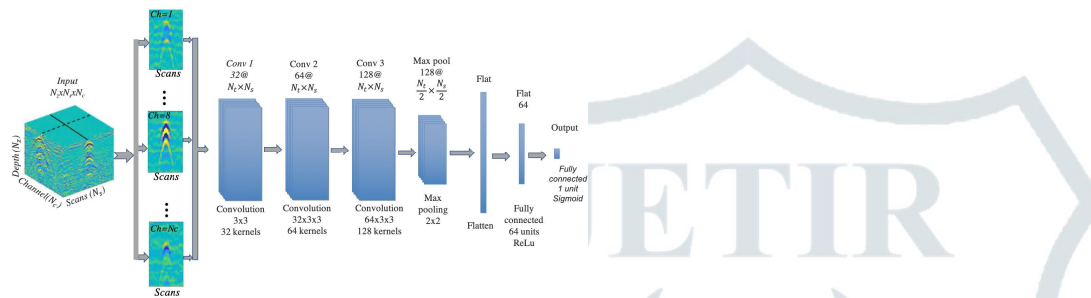


Fig.2. CNN Architecture

IV. Conclusion

We are going to invent currency detection system over machine learning and CNN techniques which solves existing accuracy problem as well as reduce crime rates by genuine or fake notes. For future work, we can implement this technique on some more currency with rich dataset. Increasing the number of currency and dataset used for the process can improve the accuracy.

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