



Fake Currency Detection

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Abstract: -

Great technological advancement in printing and scanning business created counterfeiting downside to grow alotof vigorously. As a result, counterfeit currency affects the economy and reduces the worth of original money. So it's required to notice the pretend currency. Few years back, the printing may bewiped out a print house, howevercurrently anyone will print a currency note with most accuracy employing aeasyoptical device printer. As a resultthe difficultyof faux notes rather thanthe real ones has been magnifiedterribly largely. India has been sadlycurstthe issues like corruption and black money. And counterfeit of currency notes is additionallyan enormous problem to it. This results instyle of a system that detects the fake currency note in a very less time and in aadditionaleconomical manner. Most of the previousways are supported hardware and image process techniques. Finding counterfeit currencies with these methods is a smaller amounteconomical and time consuming. to beat the on top of problem, we've gotplanned the detection of counterfeit currency victimization machine learning.

Key-Words: - Currency Detection, Deep Learning, Convolutional Neural Network

Introduction

Counterfeiting refers to associatefake copy of the currency of origin. Therefore, counterfeit currency isn't approved by the government of in India .Each year, the governmenthas got to deal with the matter of counterfeit banknotes once filtered and placed on the market. Currently with the improvement of higherphoto processing strategies, new strategies for identity of foreign moneyis designed through analyzing uniqueprotectionstatisticsgift in the foreign money. The protectionfunctions are watermarks, hidden images, safety threads, and optically variable inks. Therefore, to decide the foreign moneythe use ofphoto processing, extract the uniquerecords from the foreign moneyphoto and pickthe perfectreputationtechnique. The main strategies for foreign moneyreputation is throughfeature geometric size andthroughfeature texture. The widespread steps observedthroughphoto processing technique is to gatherphoto, to stumble on edge, to transformphoto to gray scale, characteristic extraction, photo segmentation and decision making . The disadvantageof thoseproceduresare detection performance is much lessconsidering the fact thatcharacteristic extraction is a difficult task. To overcome this drawbackcurrently the trend is towards deep learning, since it's a multilayer neural network.

Problem Formulation

We have taken this project because of the following reasons:

1. The Existing systems works mainly on image processing techniques.
2. Fake Currency is increasing in market and it is necessary to have a system that anyone can use.

Literature Review

Concerns are raised in recent years regarding the currency recognition system because of increase in counterfeit currency circulation. thereforethe target of any currency recognition system is to seek out the pretend currency. A thriving approach to characteristicpaper currency depends on a series of steps, initial to capture image, then conversion to grayscale, detection of edges, segmentation, feature extraction and image comparison.We have studied about different system that already exists. Most of the prevailinggadget of fakenote detection are primarily based totally on image processing and support vector deviceprimarily based totally. The forexphotograph is represented withinside thearea of variationthat is a vector areabuiltthroughevaluating a photograph with collection of prototype. Its advantages are Speed and Accuracy But has several other disadvantage-The confinedquantity of actualifestyles counterfeit currency, SVM is used to come across counterfeit currency , so handiesttrue currencies are required for authentication and to teach the classifier.

Methodology

In this proposed system, our relevance is to awareness on detection of fake currencies that is unfold in Indian market. In our work fake foreign money is recognized with the aid of using extracting the safety thread function withinside the foreign money note. For detecting the faux foreign money, the maximum famous approach in deep neural community known as switch gaining knowledge of the usage of Alex net is adopted.

The system proposed right hereworks right hereat thephoto of currency .The set of rulethat is carried outright here is as follows

1. Capture the image to be checked.
2. Image augmentation which means expanding the available image for training model.
3. Data annotation which means to label the data to show the outcome model want to predict.
4. Now Transfer learning using Alex net model.
5. Feature are extracted from image and comparison is made.
6. If the situation is satisfied, then the foreign moneyword is stated as authenticin any other case fake.

Result Discussion

The goal of the project are as follows:

- To determine weather the currency is fake or real one.
- It will help people to identify fake currency as it can be used by anyone.
- It will also help in improving the economy of country as fake currency is illegal by RBI.

Conclusion

The model enables to discover the fake currencyusing machine learning. This could help us get rid of the circulate of fake currency to a fewextent. It couldofferanpossibility for the consumer to welldiscover the authenticity of worddefinitelywith out going to the banks. Here we have taken into consideration the entirephoto, however in destiny we will attempt toconsist ofall of thesafetycapabilities of currency by usingappropriate structural layout and with appropriateschooling data. Further, noise can beavoided withinside the captured photo which must betaken into consideration as a pre-processing step infake currency detection process. The recognition and pretendfake currency detectionalso can be prolonged by thinking about the styles of fake currency as capabilities for enhancing the detection accuracy.

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