

# **FAKE CURRENCY DETECTION**

**PROJECT SYNOPSIS**

## **Machine Intelligence**

**BACHELOR OF TECHNOLOGY- V Sem CSE  
Department of Computer Science & Engineering**

**SUBMITTED BY**

**Batch No: 9**

R Karthick Manikandan	PES2UG20CS516
Jyothiraditya S	PES2UG20CS514
Adarsh Puranik K	PES2UG20CS487

# **PES UNIVERSITY**

**(Established under Karnataka Act No. 16 of 2013)  
100 Feet Ring Road, BSK III Stage, Bengaluru-560085**

## **Abstract and Scope**

A currency detection system which classifies currency as real or counterfeit using CNN.

This project deals with Deep Learning in which a convolution neural network (CNN) model is built with a motive to identify a counterfeit note. We are using TensorFlow for this model.

The banknote authentication dataset has been created with the high computational and mathematical strategies, which give the correct data and information regarding the entities and features related to the currency. Data processing and data Extraction is performed by implementing machine learning algorithms and image processing to acquire the final result and accuracy.

The proposed model efficiently detect the counterfeit Indian currency notes by adapting two-layered Convolution layer, two layers of Pooling and one full connective layer.

Automatic recognition of fake Indian currency is very important in major domains like banking nowadays. This system is used to detect whether the currency is fake or original through the auto mated system which is through convolution neural network, in deep learning. Deep learning excels in the task of recognition and classification of images over a large data sets, which is also primarily used in object category recognition.

## **Feasibility Study:**

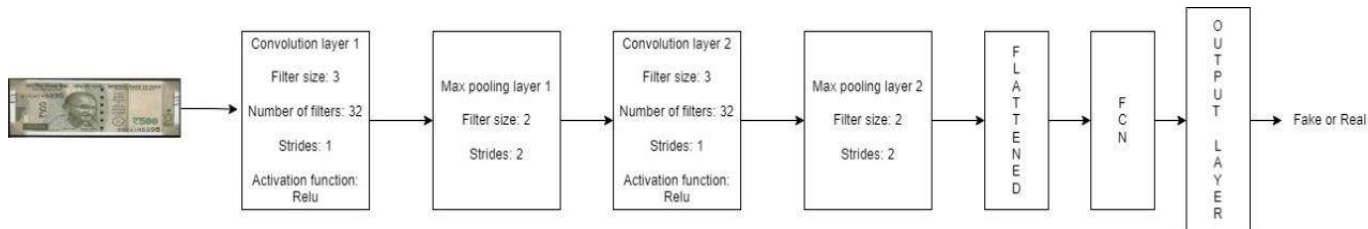
Recognition of fake Indian currency is very important in major domains like banking. This system is used to detect whether the currency is fake or original through the automated system which is through convolution neural networks, in deep learning. The problem is that common people these days are facing issues in regard to circulating fake currencies and are not able to recognize which notes are real and which are counterfeit. The main objective of this project is to make it convenient for any common man to know whether or not a note is real by using our desktop or android application. By this model we can reduce currency fraud.

## **Methodology/Planning of work:**

We will be building a convolutional neural network according to proposed algorithm which will be trained on the given fake and original currency data set, and later be able to predict whether the given currency image is fake or original. In this AFCRS we will be solving an image classification problem, where our goal will be to tell which class the input image belongs to. The way we are going to achieve it is by training an artificial neural network on image data set of currency and make the NN (Neural Network) to predict which class the image belongs to, when it sees an image having fake note or original note the next time. Convolutional neural networks (CNN's) are nowadays widely used in pattern-recognition and image-recognition problems. They have many advantages compared to other techniques. Typically, Convolution neural networks use approximately 5 to 25 distinct layers of pattern recognition. They take raw data, without the need for an initial separate pre-processing or feature extraction stage: in a CNN, the feature extraction and classification occur naturally within a single framework. This is a major advantage when compared to other image processing techniques, while they need lot of computations only for pre-processing step

In the coding part, we are going to use Keras deep learning library in python to build our CNN (Convolutional Neural Network). We should install the TensorFlow and Theano which works on the back end of Keras. TensorFlow is an open source software library for data flow programming across a range of tasks. It is a symbolic math library, and is also used for machine learning applications such as neural networks. Theano is a Python library and optimizing compiler for manipulating and evaluating mathematical expressions, especially matrix-valued ones. In Theano, computations are expressed using a NumPy- esquare syntax and compiled to run efficiently on

either CPU or GPU architectures. After installing the required libraries, we train our model as discussed above. After training and testing the model, we set an epoch value which increases the accuracy of the AFCRS upon increasing the value of epochs.



## Future Scope:

In Future, Mobile app can be developed which would be useful for normal as well as visually impaired persons, the same system can be developed for the remaining Indian currency notes and other country's currency notes. Also, the app's interface can be further modified as per the user requirements.

## Conclusion:

A technique for verifying Indian paper currency. The approach gives an efficient method of fake currency detection based on physical appearance. The work will surely be very useful for minimizing the counterfeit currency.

Through this application, we are able to see the missing parameters which the fake note doesn't have as compared to the original notes. Original Currency is being detected using Image Processing Technique

## **References:**

**J Guo, Y Zhao, and A Cai, “A reliable method for paper currency recognition based on LBP”, IEEE International Conference on Network Infrastructure and Digital Content, pp. 359-363, 2010**

**Recognition of Fake Currency Note using Convolutional Neural Networks Navya Krishna G, Sai Pooja G, Naga Sri Ram B, Yamini Radha V, Rajarajeswari P**

**Counterfeit Currency Recognition Using Deep Learning: A Review Twana Nasih Ahmed 1 , Sabat Salih Muhamad**

**FAKE CURRENCY DETECTION USING DEEP LEARNING Rohan Nashte, Harshada Patil, Sarthak Deshmukh, Shruti Aglave**

**FAKE CURRENCY DETECTION USING DEEP LEARNING” Rohan Nashte, Harshada Patil, Sarthak Deshmukh, Shruti Aglave**