ISSN: 2455-2631 December 2022 IJSDR | Volume 7 Issue 12

22-25

DETECTION OF INDIAN CURRENCY NOTES USING DEEP LEARNING TECHNIQUES

Aniket Suryawanshi[1], Akash Toshniwal[2], Shruti Salve[3], Ruchita Shinde[4], K.V.Metre[5]

Dept. of Information Technology,
MET's Institute of Engineering, Adgaon Nashik -422003.

Abstract: **Currency duplication is very harmful for the economy of a particular nation and also it is global issue. We are developing a system through which we are able to identify those fake currency notes. In our system we mainly focus on the security features of currency note like intaglio, microlettering, number panel, bleed lines, latent image, security thread, optical variable link, etc. Previously, the fake currency identification system is developed with the helps various algorithms, but as per our survey the neural network algorithms (RNN) are more efficient than previously used algorithms. So, with the help of these security features and Recurrent Neural Network algorithm.**

Keywords: **Fake currency, security features, RNN.**

INTRODUCTION

In the last eight years more than 3.53 lakh cases of counterfeit currency detection in India's banking channels is heighten according to latest government reports. The practice of counterfeiting became more refined with the arrival of paper currency. The Indian Government has taken a astonishing stride of demonetizing 500 and 1000 Rs. notes. Prime Minister Shree. Narendra Modi stated that one of the cognition for this policy was to counter the climbing menace of counterfeit Indian Currency notes. However, the Indian banks acknowledged an all- time peak amount of fake currency and also noticed an over 480% increment in doubtful transactions after demonetization, a first ever report on questioning credits ended in the wake of 2016 notes ban has discovered. The Reserve Bank of India (RBI) is the only one which has the singular authority to issue bank notes in India. The RBI being the highest monetary authority in the country prints the currency notes of all denominations from Rs.2 to 2000. Several security features have been published by the RBI so that the counterfeit notes can be detected by the general public. However, distinguishing a counterfeit note just by visual per lustration is not an easy task. Moreover, an average person is unaware of all the security features. Developing applications which can detect a currency note to be counterfeit by a camera image can help solve this problem. Deep learning models have witnessed a tremendous success in image classification tasks. Our model proposes a binary image classification task with two classes-fake or real. The Deep RNN model we have built helps us detect the counterfeit note without actually manually extracting the features of images. By training the model on the generated dataset, the model learns on it and helps us detect a counterfeit note.

LITERATURE SURVEY

In present scenario, the Indian government has announced the demonetization of all Rs 500 and Rs 1000, in reserve bank notes of Mahatma Gandhi series. Indian government has introduced a new Rs 500 and Rs 2000, to reduce fund illegal activity in India. Even then the new notes of fake or bogus currency are circulated in the society. The main objective of this work is used to identify fake currencies among the real. From the currency, the strip lines or continuous lines are detected from real and fake note by using edge detection techniques. HSV techniques are used to saturate the value of an input image. To achieve the enhance reliability and dynamic way in detecting the counterfeit currency [1]. Counterfeit currency is one of the threats which creates vice to nation's economy and hence impacts the growth worldwide. Producing forge currency or fabricating fake features in the currency considered to be a crime. Currency crime comes under the criminal law and known to be as Economical crime. Over the past few years many researchers have proposed various techniques to identify and detect forged currency. The serious problem has been come up with variety of solutions in terms of hardware related techniques, Image processing and machine learning methods. Advancements in printing and scanning technology, trading of material are some of the problems in germinating counterfeit currency. The study presents various fake currency detection techniques proposed by various researchers. The review highlighted the methodology implemented on particular characteristics feature with success rate of each method to detect counterfeited currency. Moreover, the study includes the analysis of widely acceptable statistical classification technique for currency authentication. The comparative analysis of Logistic Regression and Linear Discriminant Analysis (LDA) was performed to realize the better model for currency authentication. The study will benefit the reader in identifying most feasible technique to be implemented based on the accuracy rate [2]. Bank note identification is most important approach based on an image processing method. Many techniques and methods are studies involved in the classification of bank notes from different countries conducted experiments on separated image data sets of each country's. Deep learning is machine learning technique that analyze & learns the features of original note. The most important aspect is to find more essential features by using neural networks. In the era of big data where for any real world application, large amount of data has to be processed, deep learning is the superior techniques. In this research, we studied bank note of various countries by extracting its features in depth and analysis it using deep learning. Our system recommended a deep learning-based algorithm to detect Forged bank note through general scanners that can be used by persons to prevent personal monetary damages caused by fake bank note [3]. The one important asset of our country is Bank currency and to create discrepancies of money miscreants introduce the fake notes which resembles to original note in the financial market. During demonetization time it is seen that so much of fake currency is floating in market. In general, by a human being, it is very difficult