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 ijircce@gmail.com

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Fake Currency Identification

Bhoomika KM, Dr. Soumyasri SM

Student, Dept. of MCA, Vishvershwara Technical University, The National Institute of Engineering,
Mysuru India

Associate Professor, Dept. of MCA, Vishvershwara Technical University, The National Institute of Engineering,
Mysuru, India

ABSTRACT: The term "counterfeit money" describes imitation or fake money that is created with the intention of misleading. Recent reports claim that demonetisation caused an unprecedented amount of counterfeit currency to enter banks, increasing the number of questionable transactions. The majority of the current research on counterfeit note detection uses image processing methods. In order to detect a fake note on portable electronics like smartphones and tablets, a convolution neural network (CNN) model is constructed in this paper, which focusses on deep learning. A self-generated dataset was used to train and evaluate the developed model. CNN receives images that are captured with the smartphone camera. The outcomes are promising and can be enhanced with additional investigation and enhancements to the Deep CNN model's architecture.

I. INTRODUCTION

According to the most recent official figures, there have been more than 3.53 lakh cases of counterfeit currency detection in India's financial systems over the previous eight years. With the introduction of paper money, the art of counterfeiting advanced. The demonetizing of the 500 and 1000rupee notes is an incredible move by the Indian government. According to Prime Minister Shree Narendra Modi, one of the goals of this program was to combat the growing threat posed by counterfeit Indian currency notes. However, a first-ever report on questioning credits ended in the wake of the 2016 notes ban found that the Indian banks acknowledged an all-time peak amount of fake currency and also detected an over 480% increase in questionable transactions after demonetisation. In India, only the Reserve Bank of India (RBI) has the exclusive right to print bank notes.

The RBI, which is the nation's highest banking institution, issues banknotes in all denominations, ranging from Rs. 2 to Rs. 2000. The RBI has released a number of security features to enable the public to identify counterfeit notes. Nonetheless, it is difficult to identify a fake note merely by its appearance. Furthermore, not everyone is aware of every security feature. This issue can be resolved by creating apps that use a camera image to identify counterfeit cash notes. Image classification problems have shown remarkable success with deep learning models. A binary image classification problem with two classes—fake and real—is proposed by our model. Our developed Deep CNN model assists us in identifying the fake note without the need to manually extract visual attributes. The model learns from the generated dataset and assists us in identifying a counterfeit note by way of training.

II. OBJECTIVE

The primary objectives of the Fake Currency Identification project include gathering picture databases of actual money and counterfeit money from various sources. Preparing the data for gathered datasets. For instance, resizing an image or converting it to greyscale, etc. Divide data into test and train sets. Utilise CNN's deep learning technology to forecast the outcome. And execute precision.

III. LITERATURE SURVEY

The Report Examine the body of the Knowledge regarding Fake Currency Identification.

- [1] "Indian Currency Note Authentication Using Image Processing Techniques"
- [2] "Currency Authentication Using Deep CNN"
- [3] "A Hybrid Approach for Currency Recognition and Authentication using Image Processing Techniques and NNC"
- [4] "The Automated Currency Detection using Deep Learning Techniques"
- [5] "Automated Indian Currency Recognition using Histogram based Features and Neural Network"
- [6] "A Robust System for Detection of Counterfeit Indian Currency Notes using Texture Analysis"

IV. METHODOLOGY

The methodology for developing the Fake Currency Identification involves several key components and technologies to ensure comprehensive functionality and user interaction. This method's goal is to start a deep learning-based framework using a CNNX architecture and carry out the study for ASD currency data picture categorisation. This effective deep learning procedure will aid in the early identification of intelligent fake currency detection and provide us some understanding of the neural pathology of autistic youngsters.

The two fundamental components of a convolution neural network are feature extraction and classification. Many convolution layers, max-pooling layers, and an activation layer make up the feature extraction process. for a categorisation when the layers are all fully connected.

V. SYSTEM ARCHITECTURE

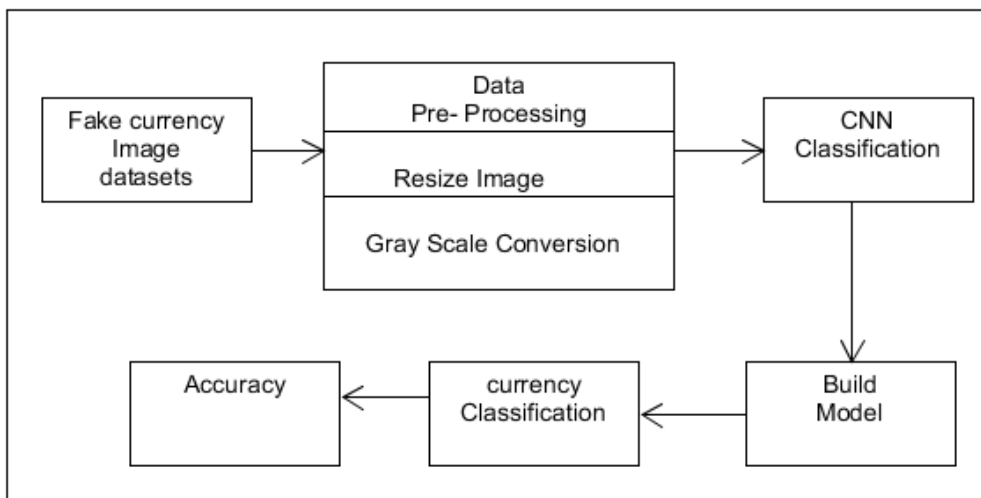
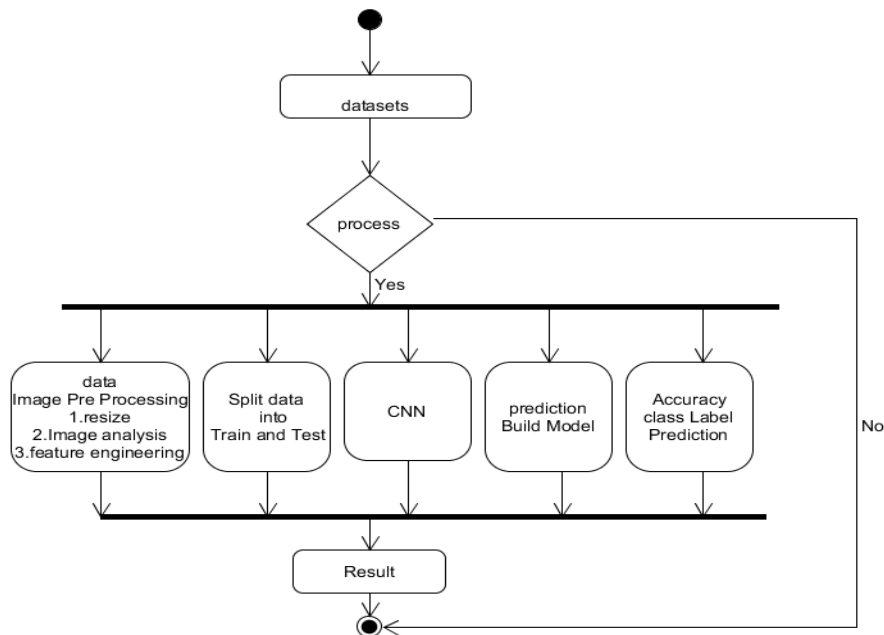
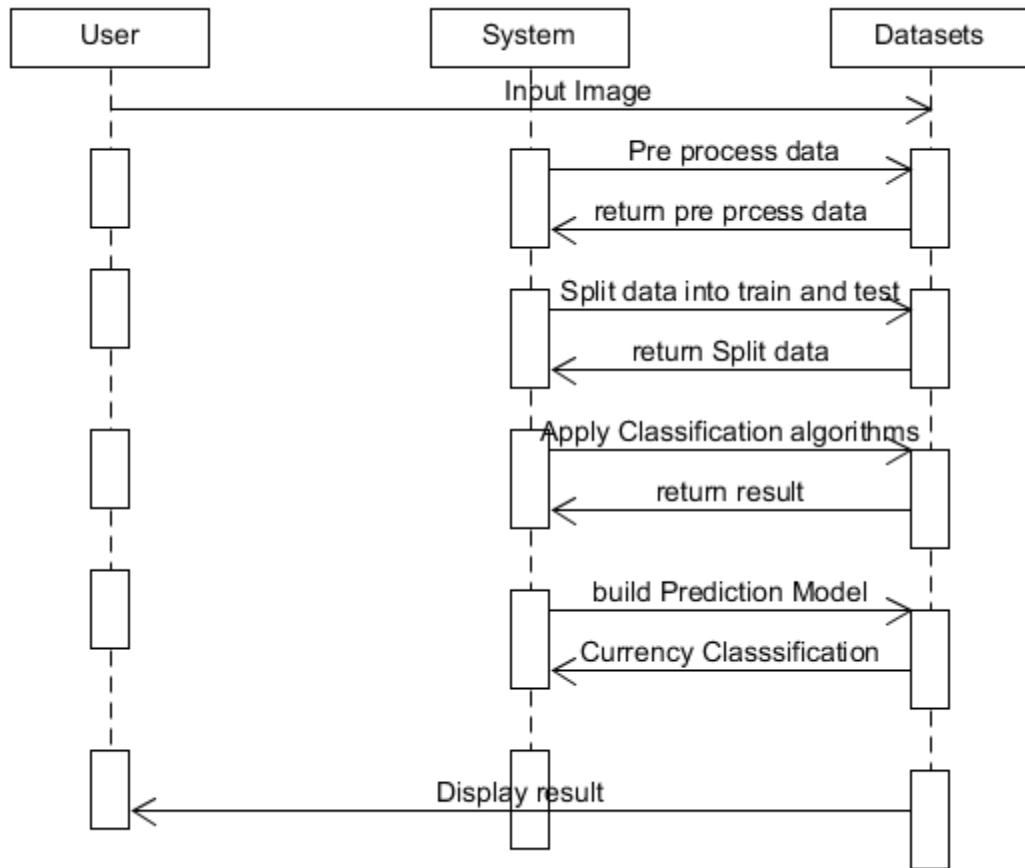


FIG.1 FLOW CONTROL DIAGRAM





SEQUENCE DIAGRAM

VI. CONCLUSION

To sum up, creating an identity system for counterfeit money is an essential first step in stopping the practice and protecting the integrity of financial transactions. With the use of machine learning and image processing techniques, the system can potentially detect counterfeit banknotes with a high degree of accuracy. The system can identify between real and fake money notes by analysing many aspects of the notes, such as texture, colour, and shape, by utilising modern technology. The system is a perfect fit for banks, financial institutions, and law enforcement organisations because of its user-friendly interface and quick processing speed. Additionally, the system's ability to adjust to new varieties of counterfeit banknotes guarantees that it will continue to function effectively even as counterfeiting methods advance. All things considered, the system for identifying counterfeit money is an effective weapon in the war against forgeries, and its deployment might drastically lower the amount of counterfeit money that is in circulation.

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