

# Fake Indian Paper Currency Detection

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**Abstract** -The paper proposes the development and use of Android applications on Fake Indian Currency Detection. By using, it anyone can easily detect fraud currency using their android mobile phone. In the country, the problem is in an acute situation and people want it easier to deal with it. As there are many mobile phone users in the country and increases day by day; to provide an android application regarding fake currency detection is a good idea. Using Android Studio the app is generated.

**Key Words:** Fake currency, Image Processing, Java programming, grayscale conversion, edge detection, segmentation, scan-line algorithm, cropping.

## 1.INTRODUCTION

Currency is the medium for exchanging goods and services. Fake currency detection is a challenging task for any person. Currency has intrinsic as well as extrinsic properties. A fake currency recognition system is designed to gather visible or hidden currency features for classification. Several years ago, the printing could be done in a print house, but now using a laser printer, anyone can print a currency note with maximum accuracy. As a result, the issue of counterfeit notes instead of genuine ones has been increased widely. India has been unfortunately accursed with the problems like corruption and black money. And counterfeit of currency notes is also a giant problem to it. This brings to the design of a system that detects the fake currency note in a short time and in an efficient way. Currency use is a necessity for survival and hence it is mandatory to keep track of its originality. Paper currencies are used considerably more in India and hence a system to detect fake currency is required.

## 2. Architectural Diagram

**2.1:** Input is given to the system for pre-processing in the form of an image that is scanned or browsed using a mobile camera.

**2.2:** The aim of pre-processing is an improvement of the image data that suppresses unwilling distortions or enhances some image features important for further processing.

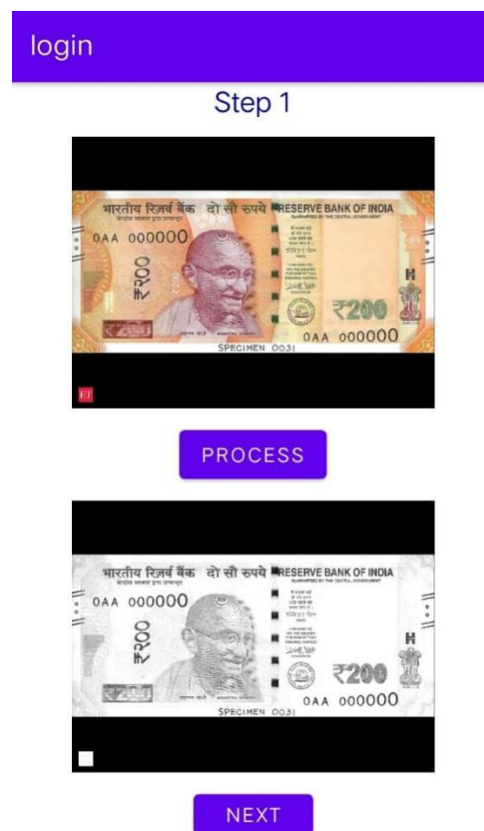
**2.3:** The image is converted into a grayscale image. Many methods can be used to convert an RGB image to a grayscale image such as averaging method with a particular threshold which we have used in this paper.

**2.4:** Edge Detection The grayscale image is the input to this step. The system uses Scan-Line Algorithm as it gives efficient results compared to the other techniques.

**2.5:** Segmentation: There are various methods like thresholding, clustering methods, region-based segmentation, etc. to perform segmentation in image processing. Here thresholding method is used to perform segmentation.

**2.6:** Feature Extraction and Comparison If the features extracted are carefully chosen it is expected that the features set will extract the relevant information from the input data. The system uses Euclidean Algorithm for feature comparison.

**2.7:** The output shows the different features marked that are used for feature extraction and comparison. In the output, the system first asks the user to browse or scan an image of the currency. The system finally displays if the image is fake or original.



**Fig1.**Converting color image of currency into a grayscale image.

In Fig, The input image is obtained by either scanning or browsing through the mobile camera. Then the image is converted into a black and white image for cropping, If the pixel value of the image is less than zero then the pixel is set to zero which means the pixel color is set as black. If the pixel value of the image is greater than 255 then the pixel is set to 255 which means the pixel color is set as white.



**Fig2.cropped image is obtained.**

In fig2, the output of fig1 is converted into a cropped image using the Scan-Line algorithm the note image is scanned line by line and wherever a white-colored pixel is obtained the image is cropped leaving the black sides cropped and only the note visible.

### 3. CONCLUSION

Paper currency is mostly used as a medium of transaction in many countries which is why many frauds occur as the notes can be printed by laser printers which make the fake notes appear as if they are original and to make it easier to use there should be a system so an app might be a solution to this problem. In this technique, the authentication of currency is described by using image processing. The features are extracted using image-based segmentation. The process begins from image acquisition and ends at the comparison of Features giving the output.

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