Team - TechnoV :

Methodology

- The payee submits the cheque to the machine.
- The system detects an input and scans the cheque.
- The cheque image is converted to grayscale and sent for pre-processing.
- Preprocessing is done by adjusting the orientation by rotation and by removing background noise using gaussian filtering.
- Segmentation is carried out using the fixed coordinate ranges or the pixel values. Desired parts of the cheque (Region of Interest) are extracted.
- The Typed text is extracted using OCR.
- Handwritten text is extracted by using various Machine Learning algorithms including Convolution Neural Networks.
- Signature verification is done by using various Deep Learning, AI and ML algorithms like Generative Adversarial Networks, Support Vectors Machine, Scale-Invariant Feature Transform, Speeded Up Robust Features and Standard Deviation.
- All the extracted parameters are then post-processed and cross verified with the Database and the cheque is validated.

Architecture

(i)

(ii)

This two will be our basic architecture model
Both are machine for cheque acceptance from user but 2nd is machine for those user who want physical interaction with bank person

The 1st machine is also a cheque acceptance machine but we will try to upgrade it for cheque processing so as soon as customers add cheque in it , the machine starts the check verification part , and processes it .

Scalability

For Scale ‘automatic cheque processing system’ across pan india we have to focus on 2 things first we have to make our system more efficient and customer awareness

1. System efficiency and scalability

For make our system more efficient and scalable we have to understand how it function

- First machine will check cheque is real or forge one , so for stop processing forge cheque there will be barcode on each cheque so it will scan barcode and check its forge one or not

- Second part of processing is payee name detection for that if we want to scale our product pan india we have to make our system that capable to detect all language of india atleast so everyone can use our system

- Now time to detect rupees written in numbers as in every part of india rupees in number type differently so we have to train our system to detect all number type so at time of processing it will work faster

- The main base to scale our machine is to improve our signature detection model for make it more efficient and scalable we will use Deep learning , AI & ML algorithm like (GAN) Generative Adversarial Networks , Support Vector Machine , Scale-Invariant Feature Transform , Speed Up Robust Feature and Standard Deviation

2.Scalability Using Customer Awareness About Methodology

- If user know some basic part of our machine that how it works then at time of fill user will be careful for filling it like User will write its name and signature in proper manner so our system easily process cheque

- We can Increase our product awareness using digital and physical branding