AUTOMATED BANK CHEQUE PROCESSING SYSTEM USING IMAGE PROCESSING AND DEEP LEARNING

ABSTRACT

Automated Bank Cheque Verification using image processing is an attempt to complement the present cheque truncating system as well as to provide an alternate methodology for the processing of Bank Cheques with minimal human intervention .When it comes to the clearance of the Bank Cheques and monetary transaction, this should not only be reliable and robust but also save time which is one of the major factor for the countries having large population .In order to perform the task of Cheque Verification, We developed a tool which acquires the Cheque leaflet key components, essential for the task of Cheque clearance using image processing and deep learning methods. These components include the bank branch code ,Cheque number, legal as well as courtesy amount, account number, and signature patterns. Our innovation aims at benefiting the banking system by re-innovating the other competent Cheque-based monetary transaction system which requires automated system intervention. For this research, we used institute of development and research in banking technology(IDRBT) Cheque dataset and deep learning based convolutional Neural Network(CNN) which gave us and accuracy of 99.14% for handwritten numeric character recognition. It resulted in improved accuracy and precise assessment of the handwritten components of bank cheque. For machine printed script, We used MATLAB in-built OCR method and the accuracy achieved is satisfactory 97.7% also for verification of signature we have Scale Invariant Feature Transform(SIFT)for extension of features and Support Vector Machine(SVM) as classifier, the accuracy achieved for signature verification is 98.10%.

KEYWORDS

Cheque Truncating System-Image Segmentation-Bank Cheque Clearance-Image Feature Extraction-Convolution Neural Network-Support Vector Machine-Scale Invariant Feature Transform