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Handwritten Notes Recognition Using Artificial Intelligence

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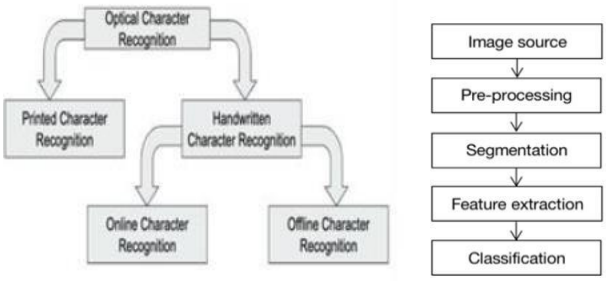
Abstract: *The handwriting recognition system plays a very important role in today's world. At present time it is very difficult to find correct meaning of handwritten documents. we need to recognize handwritten notes recognition and doctor prescription. In this project is recognition the main use of scan the handwritten notes concentrated in finding the handwritten content in the document and converting it into digital form. A handwritingrecognition system can be used to solve many complex problems and can make human's work easy. There are many applications where we need hand writing recognition system like bank cheque, postal addresses, and form documents. In all the techniques main stageis feature extraction. This project may be used in all the other fields and can be helpful inconverting handwritten text into typed format.*

Key Word: *CV2, Tensor Flow, xlswriter, Keras.*

I.INTRODUCTION

Handwriting Notes Recognition is the capability of computers and mobile devices to receive and interpret handwritten inputs. They might be scanned from doctor prescription and paper document, images, etc. A handwriting recognition system also include formatting segmentation into individual characters, and training datasets and to identified character recognition that doctor prescription. The most popular technique for handwriting notes recognition is optical character language. It allows us to scan handwritten notes recognition and doctor handwriting is convert them to text through computer vision.



Aim:

1. To Increase accuracy and Reduced Time, Reduced Manual Burden.
2. To recognize Hand written characters and Doctor Handwriting Make data available. We can be take anyperiod of time.

Scope of the Project:

Handwritten Notes Recognition is a intended to provide users with an high performing software tool to performs document image analysis, document reading and character recognition in healthcare center and medical shop havelarge amounts of documents, scanned images.

II.PROBLEM STATEMENT

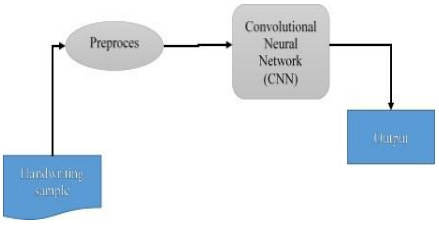
In before model they have convert only numeric digits to digital format so it is hard to recognition the letters and doctor handwriting. The collected dataset used to train image classification models using deep learning techniques. This part of problem statement we will train a datasets perception using tens or flow, xsln writter, keras to recognition the handwritten notes recognition and doctor prescription.

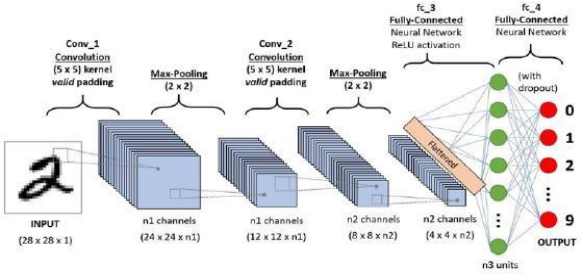
III.LITERATURE REVIEW

We reference preview literature survey of handwritten notes recognition. They used to numeric digits only hardto find the text recognition and doctor prescription. We can be implemented by handwritten notes recognition and doctor prescription to find recognition terms. This creating is an model able to recognize by using methodology and python library implementation. The Handwritten Notes Recognition is provided methodology the Convolutional Neural Network, Recurrent Neural Network, Support Vector Machine, and Optical Character Recognition these are algorithms in the implemented by handwritten notes recognition and doctor prescription.

Procedure methodology

In the proposed methodology a system which can detect the handwritten notes recognition and doctor prescription. We can be implementation by proposed work is an recognize the handwritten notes recognition and doctor handwriting. To recognize the handwritten notes and doctor prescription to the trained models by datasets to mounted. Then extracted the data from images to converted the digital format like (word, notepad). We used to the python library and algorithm are Numpy, TensorFlow, Keras, Pandas, CV2 and xls writer. The algorithm are used in handwritten notes recognition is Convolutional Neural Network, Recurrent Neural Network, Support Vector Machine, and Optical Character Recognition and Auto Encoder. To extract the data from datasets trained the model and converted the reader able format.





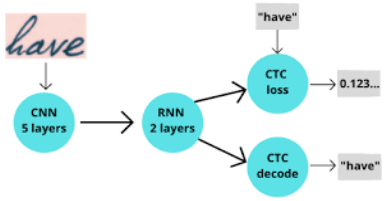
Working Methodology

Convolutional Neural Network:

CNN recognizes the character and doctor handwriting by considering the forms and contrasting the features that differentiate among characters. Our CNN implementation is experimented with the dataset to obtain the accuracy of handwritten character. In this to find the suitable for CNN for extraction the data features. Which uses in converted to digital format of ECOC classifier for recognize of handwritten notes and doctor handwritten. Thus, several models of CNN and ECOC are the trained models and validation using OCR. The CNN and ECOC is show result give accuracy as compared to ECOC classifier. CNN recognizes the handwritten notes and doctor prescription is an image preprocessing of the extract data from trained datasets by using python library and CNN algorithm and ECOC classifier.

Recurrent Neural Network:

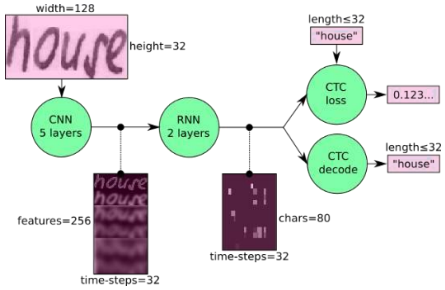
The handwritten notes recognition is defined as touch of scan app to identify handwritten and doctor prescription to recognize the datasets into CNN, RNN and OCR. This algorithm is recognizing the terms and handwritten notes. When doctor prescription is used to OCR before stores medical terms of medicines then start to recognize doctor handwritten. It is used on a wide variety of devices and screen resolutions our first step is to normalize the touch-point coordinates. Then, in order to capture the shape of the data accurately, we convert to digital format of sequence data to use as inputs to a recurrent neural network (RNN) that is trained to accurately identify the character being written (more on that step below). While have a long tradition of use in handwriting recognition, using them as inputs is novel, and allows. Thus provide a consistent representation of the input across devices with different sampling rates and accuracies.



This approach of different format of sequence data from extraction from datasets our previous models which used a so-called segment-and-decode approach, which involved creating several hypotheses of how to decompose the strokes into characters segment and then finding the most likely sequence of characters from this decomposition is sequence the datasets decoder.

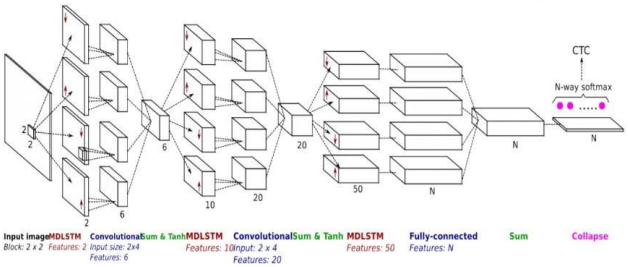
Model Overview:

We use our project deep learning algorithm. It consists of deep learning algorithm CNN layers, RNN layers and Connection Temporal Classification (CTC) layer. These are algorithm in deep learning consists of implementation by using cnn, rnn, ctc to recognize the character in handwritten.

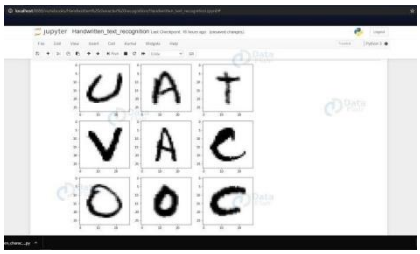


Auto-Encoder:

In the auto-encoder to decoder have recognition part of the handwritten notes and doctor handwritten to predict and encoder character from decoder part of the character recognition. To extraction the data from encoder and decoder part of the datasets. After that run the python code it will take time to run but we did the reducing a time. While run the code recognize the character from notes and doctor prescription the implementation of CNN, RNN, support vector machine and auto-encoder these algorithms. This result of recognize the character to identify the doctor prescription while scanning the notes handwritten and doctor handwritten is implementation by terms of medical predefined medicines stores used for doctor prescription to identify medical terms. Handwritten Notes Recognition will be recognizing any terms or characters it will identify by OCR.



RNN is a image preprocessing the classified by handwritten notes recognition and doctor prescription CNN layer in converted to image process. The feature of goal is handwritten character and doctor prescription prediction. It is used to the algorithm takes time to run long. They downloading built library to takes time and after completed the downloading process after that it recognize the handwritten notes and doctor handwritten.

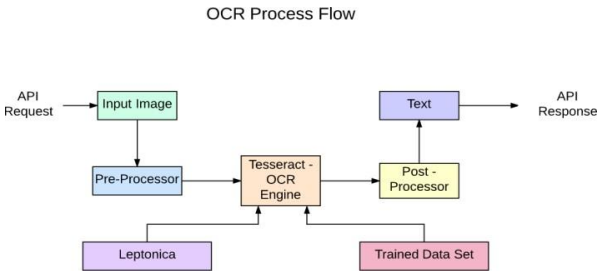


IV.ALGORITHM TECHNIQUES

The most popular technique for handwritten notes recognition is Optical Character Recognition (OCR). It allows us to scan handwritten documents and then convert them into basic text through computer vision. While training the dataset the model converts by binarization for notes handwriting and doctor prescription. To extraction the data from dataset to recognize the characters using computer vision. The notes recognition and doctor prescription are algorithm techniques used in CNN, RNN, CV2, Auto-Encoder into the more algorithm techniques is implementation.

V.DEPLOYMENT AND TRAINING

The solve first problem I suggest you aware the train the model using tesseract with multithreading to have it is derivation time or another solution would be to switch another framework i.e., TensorFlow alternative for the desired burner model because it already supports multi-threading and quite easy to work. The train model is a very large model that takes a long time to load for inference, you can convert to the digital format model to an ocr model, which can size of the models. A slight impact on your accuracy. Model monitoring can be done manually, but requires some technical means to find cases. Which the model is OCR model is falling to recognize the handwritten notes and doctor prescription. Instead, different monitoring solutions.



VI.RESULT

The OCR process is most often used to converted input images and scanned documents into PDF documents so that users should be editable format. The documents were created with a excel sheet. The OCR traininginput images to converted the extract the data from input images. Finally, we extracted the tag values from the data andconverted them into an editable format.

VII.CONCLUSION

Image to Excel Converter is essentially a handwritten notes recognition and doctor prescription application thathas a great trick up the train model. Instead of just capturing text and characters from photo or screenshots and turning model. Image to excel Converter can take text in table image and the table itself to create a Microsoft Excel work life.

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