Domain Background

Handwriting recognition , text is analyzed after being written. The information that can be analyzed is the binary output of a character against a background.
The approach to solving this would be to extract language dependent features using TF.

OCR ,This software used a more developed use of the matrix method (pattern matching). Essentially,this would compare bitmaps of the template character with the bitmaps of the read character and would compare the mto determine which character it most closely matched with .The downside was this software was sensitive to variations in sizing and the distinctions between each individuals way of writing.

The IAM Handwriting database is the biggest database of English handwriting images.

Problem Statement

I will use the deep learning based approach to identifying the features of image of characters . I will use mainly CNN .

The code will take an image as an input and detect the word as an output .

Datasets and Inputs

I will use IAM database to train the layers .It has 1539 pages of scanned text written by 600+ writers. contributing to 5500+ sentences and 11500+ words. the text is recognized on character-level, therefore words or texts not contained in the training data can be recognized too (as long as the individual characters get correctly classified).
Input: it is a gray-value image of size 128×32.
we will resize it **.**

Solution Statement

1) Preprocessing :

Before training our models with the database, we have applied various preprocessing on our dataset in order to make our data more compatible with the models and to make our dataset more robust .

2) Features Extract : the input image is fed into the CNN layers. These layers are trained to extract relevant features from the image.

3) Classification

Benchmark Model

Figure 6. Word Level and Character Level Classification Results

Architecture	Training Accuracy	Validation Accuracy	Test Accuracy
VGG-19	28%	22%	20%
RESNET-18	31%	23%	22%
RESNET-34	35%	27%	25%
Char-Level	38%	33%	31%

Evaluation Metrics

The accuracy score

Project Design

I will build a Neural Network (NN) which is trained on word-images from the IAM dataset.
It consists of convolutional NN (CNN) layers, recurrent NN (RNN) layers and a final Connectionist Temporal Classification (CTC) layer.