CS 583 Final Project: Optical Character Recognition

Group Members

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Files in the zip:

1. InceptionV3.ipynb - implementation of the InceptionV3 model
2. VGG16.ipynb - implementation of the VGG16 model
3. final_split1 - training and testing data
4. modelsInceptionV3 - has the models and the label of the inceptionV3 architecture
5. modelsVGG16 - has the models and the label of the VGG16 architecture
6. extraction.py - this code was used to extract a part of the data downloaded from NIST Special Database 19 (https://www.nist.gov/srd/nist-special-database-19)
7. splitting.py - this code was used to split the extracted data in the previous step into train and test.

Instructions to execute:

1. Mount the notebook to the drive using the commands-

```
from google.colab import drive

drive.mount('/content/drive', force_remount=True)
```

2. cd into the folder where all the data is stored.

```
%cd drive/My Drive/CV_PROJ

!ls
```

3. We built the models and performed the training with 2 optimisers : Adam and SGD with the 3 learning rates: 0.1,0.01 and 0.001. These models are present in the modelsInceptionV3 and modelsVGG16 and are named according to the optimiser and learning rate that we used for the respective model.
4. The next block is for testing of the different models. We have used the metrics Accuracy, Recall, Precision and F1-Score to analyze the performance of the various models.

Edit the path of the models in the INCEPTIONV3 and VGG16 notebooks which are provided to perform testing of the trained models.

5. The final block gives the overall testing accuracy of the model.