Report: README.md File

Course: ESCE 551 MP3

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Getting Started

We recommend using Google Colab to run our code. Just open our file in Colab and click "Run All."

Prerequisites

To execute this code, ensure that you have Python 3.x installed along with the following libraries:

- pickle
- matplotlib
- numpy
- torch
- torchvision
- sklearn
- pandas
- tqdm
- cv2
- scikit-image

Additionally, the following packages must be imported:

- pickle
- matplotlib.pyplot
- numpy
- torchvision.transforms
- torch.utils.data.Dataset
- torch.utils.data.DataLoader
- PIL.Image
- torch
- sklearn.model_selection.train_test_split
- torchvision.datasets.KMNIST
- matplotlib.pyplot
- time
- pandas
- tqdm.notebook
- random

- torch.nn
- torch.nn.functional
- torch.optim
- cv2
- skimage.util.img_as_ubyte
- torchvision.models.VGG
- torchvision.models.vgg16

Models and Functions

ResNet 18 + Cross Validation

- Run Time: Approximately 2 minutes using Google Colab GPU (running for 5 iterations).
- Description: This is a CNN model.

ResNet 34 + Cross Validation

- Run Time: Approximately 2 minutes using Google Colab GPU (running for 5 iterations).
- Description: This is a CNN model.

VGG 16

- Run Time: Approximately 2 minutes using Google Colab GPU (running for 5 iterations).
- Description: This is a CNN model.

make_prediction

- Description: This function takes the test data as input, a trained model, and predicts output labels.

save_csv

- Description: This function creates a CSV file named submit.csv containing the predictions.