This folder consists of me implementing MLP,CNN,MLP with PCA,Logistic Regression with PCA and comparing them

Question :

We had a oracle file which gave the data as q2_data which consists of 10 folders named 0-9 which consists of images of digits from 0-9.(1000 each)

And detailed method is described in the notebook.

Results:

As shown in ipynb. CNN achieves the highest accuracy at 97.00%, followed by MLP at 95.00%, MLP with PCA at 94.30%, and Logistic Regression with PCA at 84.60%. We can observe that when using the model MLP with PCA, we are removing some features and focusing only on the important features, which slightly decreases the accuracy compared to just using MLP. Logistic Regression with PCA has the lowest accuracy, which makes sense because, being a linear model, it has far fewer parameters to learn compared to other neural network models, which have many more parameters, leading to better performance

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