

AML ASSIGNMENT 1

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TASK 1

- Relabelled the data into 3 labels using `RelabeledFashionMNIST` class i.e. Clothes (T-shirt, Trouser, Pullover, Dress, Coat, Shirt), Shoes (Sandal, Sneaker, Ankle boot), Others (Bag).
- Built a CNN using 3 convolutional layer and 2 classification linear layer. Trained for 10 epochs resulting in 99.14% accuracy using SGD as optimizer and Cross Entropy as the loss function.
- Scrambled the data and trained using the same CNN model resulting in 99.17% accuracy.
- Conclusion: Although nothing can be inferred from this result as upon several trials it was observed that accuracy for both the models lied between 99.1% to 99.2% with none of the model performing better than other all the time.

TASK 2

- Trained ResNet18 from scratch for 10 epochs with 11.2M trainable parameters resulting in 60% accuracy using Adam as optimizer and Cross Entropy as the loss function.
- Trained Pretrained ResNet18 using default weights for 10 epochs with 8.4M trainable parameters unfreezing only the 4th layer resulting in 14% accuracy.
- Conclusion: One can easily suspect the decrease in accuracy to the fact that the data ImageNet was trained on (we are using ImageNet's weights) is completely different than the human face emotion data. Upon experimentation with unfreezing more layers, the accuracy bumped to 17% which is a negligible increase.