GMDL212, HW6

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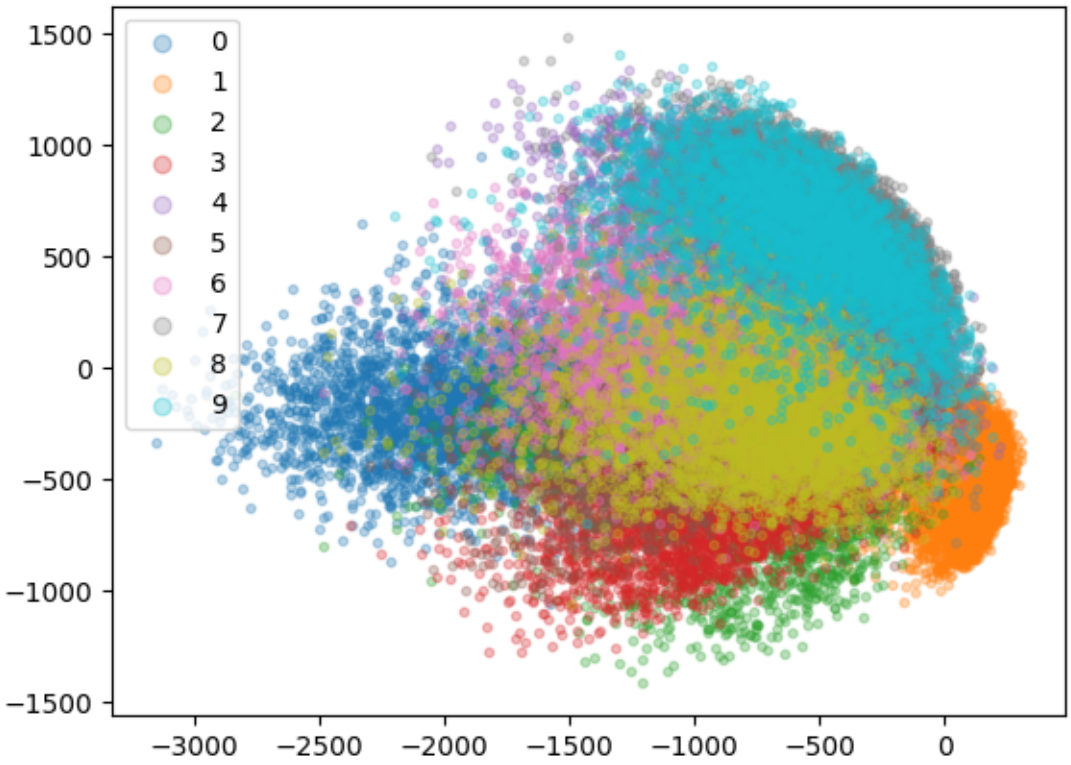
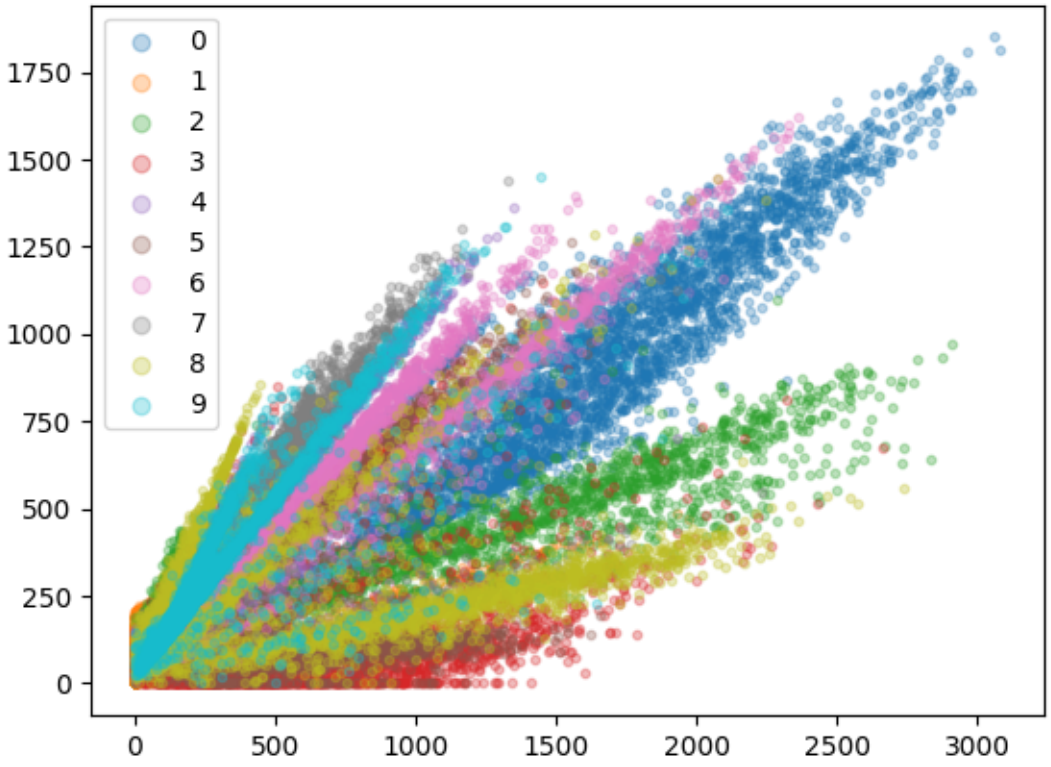
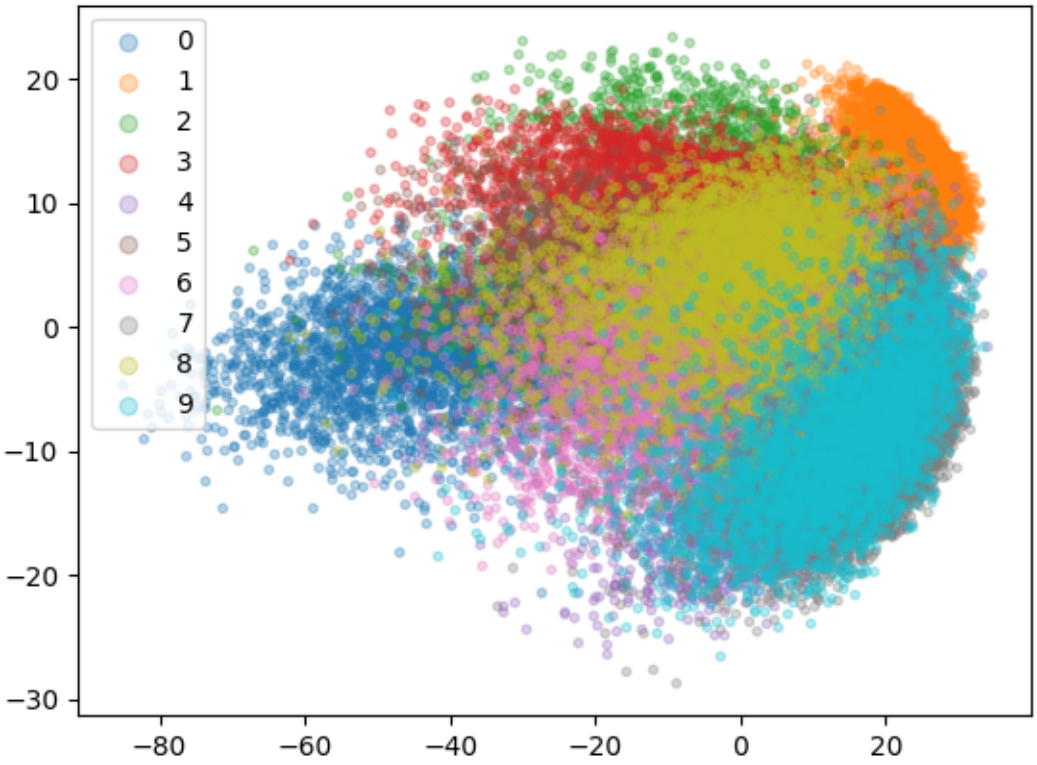
Computer Exercise 2:



Computer Exercise 4:



Computer Exercise 5:



problem 1:

As we can see fiduers 1 and 3 are almost identical and the major differnce between them is a rotaion and scale both are linear tranformations. That means the linear autoencoder converged into somthing similar to the PCA wich is possiable because it does not use activation function meaning it can be represented as matrix multiplication. also, we can recall that PCA is the argmin in realtion to frobenius norm and i choose MSE as my loss. MSE and frobenius norm have the same argmin so it makes sense that the network converaged into somthing similar to the PCA. There is however a major differnce between the autoencoder to the linear autoencoder and the PCA, i belive the activation function i use (ReLU for all layers) made the diffrece and the encoder learnd a non linear reduction.