In [**28**]: runfile('/Users/jayasaharan/Documents/Mini 1/Machine Learning 701/Project/TestNetwork.py', wdir='/Users/jayasaharan/Documents/Mini 1/Machine Learning 701/Project')
  0%| | 0/5 [00:00<?, ?it/s]Reloaded modules: Network
Data Loaded
Constructing DAE Initialized NN
Training Layer fc1 : Begin
 20%|█▉ | 1/5 [00:13<00:54, 13.58s/it]For epoch 0 MSE loss is 5.879255373030901
 40%|███▉ | 2/5 [00:27<00:40, 13.60s/it]For epoch 1 MSE loss is 3.7481234036386013
 60%|█████▉ | 3/5 [00:40<00:27, 13.61s/it]For epoch 2 MSE loss is 3.672336708754301
 80%|███████▉ | 4/5 [00:54<00:13, 13.62s/it]For epoch 3 MSE loss is 3.6640203706920147
100%|██████████| 5/5 [01:08<00:00, 13.65s/it]
  0%| | 0/5 [00:00<?, ?it/s]For epoch 4 MSE loss is 3.662998214364052
Training Layer fc1 : End
Training Layer fc2 : Begin
 20%|█▉ | 1/5 [00:15<01:00, 15.10s/it]For epoch 0 MSE loss is 0.23488468944560736
 40%|███▉ | 2/5 [00:30<00:45, 15.10s/it]For epoch 1 MSE loss is 0.09953236824367195
 60%|█████▉ | 3/5 [00:45<00:30, 15.11s/it]For epoch 2 MSE loss is 0.09893936035223305
 80%|███████▉ | 4/5 [01:00<00:15, 15.11s/it]For epoch 3 MSE loss is 0.09680796123575419
100%|██████████| 5/5 [01:15<00:00, 15.10s/it]
  0%| | 0/5 [00:00<?, ?it/s]For epoch 4 MSE loss is 0.09820884838700294
Training Layer fc2 : End
Training Layer fc3 : Begin
 20%|█▉ | 1/5 [00:16<01:06, 16.54s/it]For epoch 0 MSE loss is 0.02740526547495392
 40%|███▉ | 2/5 [00:33<00:49, 16.54s/it]For epoch 1 MSE loss is 0.0020235967331245774
 60%|█████▉ | 3/5 [00:49<00:33, 16.55s/it]For epoch 2 MSE loss is 0.0017727234207995934
 80%|███████▉ | 4/5 [01:06<00:16, 16.53s/it]For epoch 3 MSE loss is 0.0017278028772125253
100%|██████████| 5/5 [01:22<00:00, 16.56s/it]
  0%| | 0/5 [00:00<?, ?it/s]For epoch 4 MSE loss is 0.001786549813914462
Training Layer fc3 : End
Training Layer fc4 : Begin
 20%|█▉ | 1/5 [00:17<01:09, 17.38s/it]For epoch 0 MSE loss is 0.020700053053587908

```
 40%|████       | 2/5 [00:33<00:50, 16.99s/it]For epoch 1 MSE
loss is 0.002918552407209063
 60%|██████     | 3/5 [00:49<00:33, 16.70s/it]For epoch 2 MSE
loss is 0.001938419445650652
 80%|████████   | 4/5 [01:05<00:16, 16.48s/it]For epoch 3 MSE
loss is 0.0010852041250473121
100%|██████████| 5/5 [01:21<00:00, 16.35s/it]
  0%|          | 0/5 [00:00<?, ?it/s]For epoch 4 MSE loss is
0.0009408912319486262
Training Layer fc4 : End
Training Layer out : Begin
 20%|██        | 1/5 [00:15<01:02, 15.57s/it]For epoch 0 MSE
loss is 0.2417750006861752
 40%|████       | 2/5 [00:31<00:46, 15.59s/it]For epoch 1 MSE
loss is 0.008474774898786563
 60%|██████     | 3/5 [00:46<00:31, 15.60s/it]For epoch 2 MSE
loss is 0.003072972711379407
 80%|████████   | 4/5 [01:02<00:15, 15.60s/it]For epoch 3 MSE
loss is 0.002595410383946728
100%|██████████| 5/5 [01:18<00:00, 15.64s/it]For epoch 4 MSE
loss is 0.0024143301488948055
Training Layer out : End
Model Constructed
Data Loaded
Constructing Random Initialized NN

Model Constructed
Data Loaded
Constructing Autoencoder Initialized NN
 20%|██        | 1/5 [00:14<00:58, 14.55s/it]For epoch 0 MSE
loss is 5.6930230259895325
 40%|████       | 2/5 [00:29<00:43, 14.52s/it]For epoch 1 MSE
loss is 3.827719211578369
 60%|██████     | 3/5 [00:43<00:28, 14.47s/it]For epoch 2 MSE
loss is 3.7305466905236244
 80%|████████   | 4/5 [00:57<00:14, 14.48s/it]For epoch 3 MSE
loss is 3.685333613306284
100%|██████████| 5/5 [01:12<00:00, 14.47s/it]For epoch 4 MSE
loss is 3.6678501702845097
Model Constructed

model DAE Layer-by-Layer epoch 0 total correct: 14253 total %
correct: 0.23755 loss func: 1.871448814868927
model Default Pytorch epoch 0 total correct: 45219 total %
correct: 0.75365 loss func: 0.7420445576310157
model End-to-End Autoencoder epoch 0 total correct: 13167
total % correct: 0.21945 loss func: 1.9920751412709554
```

model DAE Layer-by-Layer epoch 1 total correct: 17763 total %
correct: 0.29605 loss func: 1.6373645842075348
model Default Pytorch epoch 1 total correct: 57376 total %
correct: 0.9562666666666667 loss func: 0.15089821753402552
model End-to-End Autoencoder epoch 1 total correct: 19004
total % correct: 0.3167333333333333 loss func:
1.6272105991840362

model DAE Layer-by-Layer epoch 2 total correct: 18412 total %
correct: 0.3068666666666667 loss func: 1.6016007701555888
model Default Pytorch epoch 2 total correct: 58134 total %
correct: 0.9689 loss func: 0.10537663052479426
model End-to-End Autoencoder epoch 2 total correct: 19863
total % correct: 0.33105 loss func: 1.5820571303367614

model DAE Layer-by-Layer epoch 3 total correct: 18588 total %
correct: 0.3098 loss func: 1.5831179797649384
model Default Pytorch epoch 3 total correct: 58571 total %
correct: 0.9761833333333333 loss func: 0.07941512387866775
model End-to-End Autoencoder epoch 3 total correct: 20312
total % correct: 0.33853333333333335 loss func:
1.5551328837871552

model DAE Layer-by-Layer epoch 4 total correct: 20485 total %
correct: 0.34141666666666665 loss func: 1.5407396256923676
model Default Pytorch epoch 4 total correct: 58667 total %
correct: 0.9777833333333333 loss func: 0.07118214077005784
model End-to-End Autoencoder epoch 4 total correct: 21639
total % correct: 0.36065 loss func: 1.5353707790374755

In [**29**]: