**A 3-layer NN (with layers for input, hidden and output). The hidden layer has 5 perceptrons**

try 1

After 32459 Epoch, ~15 minutes, the autoencoder reaches a stable train loss value of 1.0121e-07

The hidden layer is

[[3.13628006e+00 1.02838345e+01 9.49799347e+00 1.51453018e-02

9.06637383e+00]

[1.36577106e+00 9.40048409e+00 1.45484304e+00 6.10851479e+00

1.28880253e+01]

[3.12547183e+00 3.98764539e+00 1.11097217e+00 1.30220490e+01

8.74865150e+00]

[1.34874249e+01 8.34483910e+00 6.27295971e+00 5.04558563e-01

4.33540058e+00]

[1.69849396e-03 1.85610199e+00 9.48935318e+00 7.32005978e+00

1.22354012e+01]

[1.10069218e+01 1.30279708e+00 1.15429287e+01 4.87474823e+00

2.10069942e+00]

[1.12503386e+01 7.15756321e+00 4.01868343e-01 1.64397669e+00

1.25563879e+01]

[8.50451088e+00 4.61475134e-01 9.53786373e+00 3.41992378e-02

1.14714966e+01]

[3.79640555e+00 1.50823593e-03 9.78984833e+00 1.21167383e+01

4.75901270e+00]

[7.72059965e+00 1.18057308e+01 1.12454033e+01 5.50096989e+00

2.58752823e-01]

[1.28193331e+01 3.98548126e-01 1.53561401e+00 7.02298832e+00

6.31479311e+00]

[1.08100986e+01 5.99922800e+00 6.91062784e+00 1.27362595e+01

1.26748085e-02]

[8.01602936e+00 1.13173599e+01 1.55472755e-02 8.59556198e+00

4.99444675e+00]

[1.44596100e-02 1.02782421e+01 7.29590130e+00 1.05741539e+01

4.73758745e+00]

[2.32831526e+00 4.69388390e+00 1.35573616e+01 5.29899502e+00

4.32336855e+00]

[6.78270769e+00 2.80103683e-02 1.87547708e+00 7.38613701e+00

1.36201782e+01]]

Try 2

The hidden layer is

[[2.4988646e+01 8.7719917e-02 1.9380608e+01]

[4.3959107e+00 8.1025124e-01 1.4825954e+00]

[1.8496323e-01 3.3060098e+00 4.9058638e+00]

[2.9911983e+01 3.5043378e+00 1.2846886e+01]

[3.8357306e+00 1.1217380e+01 2.6750839e+01]

[2.7452080e+01 2.0967175e+01 3.7226200e-01]

[9.0852146e+00 4.3340473e+00 2.4389004e+01]

[3.5590277e+00 3.7390213e+00 1.6054153e-02]

[2.1826963e+00 2.5553513e-01 3.4099212e+00]

[2.8900156e+00 2.7439304e+01 1.5022261e+01]

[1.6648293e+01 2.6169334e+01 1.2224388e+00]

[0.0000000e+00 2.2518438e+01 2.1955559e+01]

[7.8785515e-01 4.3191333e+00 1.8061848e+00]

[1.9729015e+01 6.3013554e-01 2.6592213e+01]

[8.5342655e+00 2.6212221e+01 5.8110051e+00]

[2.7017372e+01 1.0023004e+01 3.9223933e+00]]

try 3

The hidden layer is

[[5.57834768e+00 1.02521896e-01 8.65081215e+00 1.01525927e+01

4.60274458e+00]

[7.55994797e+00 6.67670727e+00 8.79224300e+00 5.67837954e-01

3.87597322e-01]

[5.23035526e-01 6.56940746e+00 7.31525040e+00 8.87901306e+00

7.49009609e-01]

[9.85961533e+00 1.85187602e+00 6.73871279e-01 2.06646061e+00

7.33823776e+00]

[9.89060211e+00 7.91705036e+00 1.47051919e+00 3.03161740e+00

9.00917292e-01]

[5.64412546e+00 9.16859150e+00 3.40938568e-05 9.48558426e+00

1.50376678e+00]

[1.01477251e+01 2.68072605e+00 6.05632782e+00 6.36171579e+00

1.12833977e-02]

[3.59067822e+00 3.67109442e+00 1.66893005e-05 7.03430176e+00

1.01336908e+01]

[7.86781311e-06 1.05113621e+01 2.26826191e+00 6.41608286e+00

7.24060917e+00]

[1.00417399e+00 8.10169411e+00 9.21328735e+00 4.81345177e-01

5.66867065e+00]

[8.53038502e+00 2.06585455e+00 5.04115820e-01 1.06035681e+01

4.88170433e+00]

[4.27126026e+00 4.73783302e+00 4.65329599e+00 1.32725954e-01

1.09098806e+01]

[7.01824474e+00 0.00000000e+00 9.08549976e+00 1.42412686e+00

6.69511604e+00]

[7.05265999e-03 2.90715790e+00 8.32147598e+00 6.51080608e+00

9.67496872e+00]

[6.20850897e+00 1.03831215e+01 1.33590603e+00 4.76837158e-06

6.92231417e+00]

[4.17471981e+00 1.18446655e+01 5.56957912e+00 3.96326494e+00

1.60793304e-01]]

try 4

The hidden layer is

[[8.5333681e+00 1.0268457e+01 5.4658823e+00 3.5452843e-03 5.1196494e+00]

[3.2233949e+00 1.1175890e+01 2.4145408e+00 5.1593494e+00 2.8177767e+00]

[1.0300518e+01 3.9259558e+00 2.1404672e-01 2.4665675e+00 5.5000343e+00]

[1.9055367e-02 6.8008652e+00 7.2565966e+00 2.0511725e+00 6.0276594e+00]

[9.7637739e+00 1.9335747e-04 4.4023428e+00 8.2627144e+00 2.0651879e+00]

[4.8630829e+00 8.6423903e+00 3.4031868e-02 2.6928866e+00 9.2958431e+00]

[2.4434328e-02 7.0060291e+00 6.3038254e-01 8.9796534e+00 6.9830799e+00]

[8.1443806e+00 2.5631285e-01 7.6359081e+00 1.1074452e+00 5.7905931e+00]

[3.0721369e+00 1.2884228e+00 3.9709401e+00 1.1823758e+01 3.1907768e+00]

[5.9297528e+00 3.7018538e-02 2.0304680e-02 7.7610464e+00 9.6304569e+00]

[9.6924992e+00 5.0420113e+00 8.0114384e+00 3.8319378e+00 5.8712959e-03]

[3.5549703e+00 2.6525664e-01 9.0998020e+00 6.2160339e+00 1.8545434e+00]

[6.9573498e+00 6.7760844e+00 2.2793531e-02 9.0673389e+00 1.0091305e-01]

[4.3433223e+00 2.2982321e+00 5.0657392e+00 1.9881253e+00 1.1106609e+01]

[7.6171517e-01 7.2979503e+00 7.1528263e+00 9.4198914e+00 4.0980792e-01]

[1.4048529e-01 5.6217098e-01 7.8481627e+00 8.0678177e+00 8.7752562e+00]]

try5

The hidden layer is

[[5.71106625e+00 4.86948442e+00 6.03596210e-01 8.95603943e+00

4.24246788e-01]

[1.03029232e+01 1.82964599e+00 1.23078108e-01 6.53061581e+00

6.10069942e+00]

[8.08119774e-03 1.87415838e+00 9.60449409e+00 3.20338726e+00

7.58778143e+00]

[8.97632790e+00 1.85154915e-01 6.78024101e+00 6.20622730e+00

7.80392408e-01]

[1.76839828e-02 6.54399204e+00 2.84572124e-01 7.84072638e+00

6.42791939e+00]

[9.90976048e+00 6.79364109e+00 2.03357196e+00 2.55088735e+00

4.42911386e-01]

[8.76628971e+00 7.51129246e+00 4.84964371e-01 4.32033539e-02

8.77561378e+00]

[2.45534658e+00 1.40957832e-02 5.21351671e+00 9.40993786e+00

4.46951818e+00]

[7.88674116e+00 5.78339577e-01 7.01652813e+00 1.47011042e-01

7.02095890e+00]

[3.42419124e+00 1.00419436e+01 7.91651964e-01 1.99070168e+00

2.98616457e+00]

[7.37750387e+00 5.94826698e+00 9.97475147e+00 1.71033382e-01

2.62758970e-01]

[6.73694372e-01 1.01488857e+01 6.12312365e+00 8.39246368e+00

1.24138355e-01]

[1.21402478e+00 8.18516159e+00 4.08084440e+00 5.12340069e-01

1.01870852e+01]

[1.33078098e-02 9.00144768e+00 8.95666981e+00 7.26977587e-01

3.31466961e+00]

[1.81252396e+00 3.31791997e+00 1.00784883e+01 5.94243622e+00

4.59463835e-01]

[4.22249603e+00 1.48644781e+00 2.42646146e+00 5.02163601e+00

1.07569990e+01]]