

base) anand.narasimhan@nbp-204-198 Deep Learning Project % /usr/local/bin/python3  
"/Users/anand.narasimh  
an/Desktop/Deep Learning Project/main.py"

**Test set: Average loss: 2.2987, Accuracy: 1135/10000 (11%)**

Test set: Average loss: 2.2925, Accuracy: 1136/10000 (11%)

Test set: Average loss: 2.2555, Accuracy: 3668/10000 (37%)

Test set: Average loss: 0.6281, Accuracy: 7923/10000 (79%)

**Test set: Average loss: 0.3787, Accuracy: 8805/10000 (88%)**

Test set: Average loss: 0.2830, Accuracy: 9095/10000 (91%)

Test set: Average loss: 0.2413, Accuracy: 9252/10000 (93%)

Test set: Average loss: 0.1859, Accuracy: 9445/10000 (94%)

Test set: Average loss: 0.1558, Accuracy: 9538/10000 (95%)

**Test set: Average loss: 0.1529, Accuracy: 9547/10000 (95%)**

Test set: Average loss: 0.1359, Accuracy: 9570/10000 (96%)

Test set: Average loss: 0.1212, Accuracy: 9610/10000 (96%)

Test set: Average loss: 0.1166, Accuracy: 9657/10000 (97%)

Test set: Average loss: 0.1146, Accuracy: 9625/10000 (96%)

**Test set: Average loss: 0.0932, Accuracy: 9708/10000 (97%)**

Test set: Average loss: 0.1189, Accuracy: 9595/10000 (96%)

Test set: Average loss: 0.0904, Accuracy: 9711/10000 (97%)

Test set: Average loss: 0.0775, Accuracy: 9763/10000 (98%)

Test set: Average loss: 0.0875, Accuracy: 9739/10000 (97%)

**Test set: Average loss: 0.0783, Accuracy: 9758/10000 (98%)**

Test set: Average loss: 0.0785, Accuracy: 9771/10000 (98%)

Test set: Average loss: 0.0719, Accuracy: 9787/10000 (98%)

Test set: Average loss: 0.0880, Accuracy: 9705/10000 (97%)

Test set: Average loss: 0.0663, Accuracy: 9795/10000 (98%)

**Test set: Average loss: 0.0716, Accuracy: 9781/10000 (98%)**

Test set: Average loss: 0.0880, Accuracy: 9714/10000 (97%)

Test set: Average loss: 0.0628, Accuracy: 9796/10000 (98%)

Test set: Average loss: 0.0656, Accuracy: 9794/10000 (98%)

Test set: Average loss: 0.0684, Accuracy: 9787/10000 (98%)

**Test set: Average loss: 0.0687, Accuracy: 9794/10000 (98%)**

the sparsity of model is 0.700

Epoch Running Time: -43.20409350395202

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(base) anand.narasimhan@nbp-193-159 Deep Learning Project % /usr/local/bin/python3 "/Use  
rs/anand.narasimhan/Desktop/Deep Learning Project/main.py"

**Test set: Average loss: 2.3008, Accuracy: 1135/10000 (11%)**

Test set: Average loss: 2.2998, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2987, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2969, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2919, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2682, Accuracy: 3284/10000 (33%)

Test set: Average loss: 1.4233, Accuracy: 6385/10000 (64%)

Test set: Average loss: 0.4237, Accuracy: 8805/10000 (88%)

Test set: Average loss: 0.3141, Accuracy: 9091/10000 (91%)

**Test set: Average loss: 0.2743, Accuracy: 9226/10000 (92%)**

Test set: Average loss: 0.2362, Accuracy: 9293/10000 (93%)

Test set: Average loss: 0.2076, Accuracy: 9373/10000 (94%)

Test set: Average loss: 0.1924, Accuracy: 9434/10000 (94%)

Test set: Average loss: 0.1670, Accuracy: 9484/10000 (95%)

Test set: Average loss: 0.1640, Accuracy: 9497/10000 (95%)

Test set: Average loss: 0.1521, Accuracy: 9513/10000 (95%)

Test set: Average loss: 0.1359, Accuracy: 9599/10000 (96%)

Test set: Average loss: 0.1290, Accuracy: 9603/10000 (96%)

Test set: Average loss: 0.1406, Accuracy: 9575/10000 (96%)

**Test set: Average loss: 0.1275, Accuracy: 9623/10000 (96%)**

Test set: Average loss: 0.1170, Accuracy: 9638/10000 (96%)

Test set: Average loss: 0.1193, Accuracy: 9635/10000 (96%)

Test set: Average loss: 0.1138, Accuracy: 9658/10000 (97%)

Test set: Average loss: 0.1114, Accuracy: 9644/10000 (96%)

Test set: Average loss: 0.1034, Accuracy: 9687/10000 (97%)

Test set: Average loss: 0.1112, Accuracy: 9647/10000 (96%)

Test set: Average loss: 0.1017, Accuracy: 9682/10000 (97%)

Test set: Average loss: 0.1089, Accuracy: 9665/10000 (97%)

Test set: Average loss: 0.1089, Accuracy: 9649/10000 (96%)

**Test set: Average loss: 0.1086, Accuracy: 9656/10000 (97%)**

the sparsity of model is 0.800

Epoch Running Time: -52.512398505210875

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rs/anand.narasimhan/Desktop/Deep Learning Project/main.py"

**Test set: Average loss: 2.3013, Accuracy: 1135/10000 (11%)**

Test set: Average loss: 2.3008, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3006, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3005, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3003, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3001, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2998, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2994, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2987, Accuracy: 1135/10000 (11%)

**Test set: Average loss: 2.2975, Accuracy: 1135/10000 (11%)**

Test set: Average loss: 2.2951, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2887, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2620, Accuracy: 3171/10000 (32%)

Test set: Average loss: 1.9701, Accuracy: 3744/10000 (37%)

Test set: Average loss: 1.0225, Accuracy: 6584/10000 (66%)

Test set: Average loss: 0.6280, Accuracy: 7983/10000 (80%)

Test set: Average loss: 0.5015, Accuracy: 8486/10000 (85%)

Test set: Average loss: 0.4265, Accuracy: 8711/10000 (87%)

Test set: Average loss: 0.3818, Accuracy: 8891/10000 (89%)

**Test set: Average loss: 0.3526, Accuracy: 8950/10000 (90%)**

Test set: Average loss: 0.3378, Accuracy: 8982/10000 (90%)

Test set: Average loss: 0.3166, Accuracy: 9048/10000 (90%)

Test set: Average loss: 0.2870, Accuracy: 9104/10000 (91%)

Test set: Average loss: 0.2600, Accuracy: 9210/10000 (92%)

Test set: Average loss: 0.2451, Accuracy: 9247/10000 (92%)

Test set: Average loss: 0.2462, Accuracy: 9262/10000 (93%)

Test set: Average loss: 0.2177, Accuracy: 9339/10000 (93%)

Test set: Average loss: 0.2074, Accuracy: 9396/10000 (94%)

Test set: Average loss: 0.2122, Accuracy: 9353/10000 (94%)

**Test set: Average loss: 0.2303, Accuracy: 9322/10000 (93%)**

the sparsity of model is 0.900

Epoch Running Time: -50.990161180496216

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(base) anand.narasimhan@nbp-193-159 Deep Learning Project % /usr/local/bin/python3 "/Use  
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**Test set: Average loss: 0.5720, Accuracy: 8220/10000 (82%)**

Test set: Average loss: 0.2046, Accuracy: 9402/10000 (94%)

Test set: Average loss: 0.1357, Accuracy: 9576/10000 (96%)

Test set: Average loss: 0.1158, Accuracy: 9636/10000 (96%)

Test set: Average loss: 0.0964, Accuracy: 9677/10000 (97%)

Test set: Average loss: 0.0802, Accuracy: 9729/10000 (97%)

Test set: Average loss: 0.0796, Accuracy: 9738/10000 (97%)

Test set: Average loss: 0.0780, Accuracy: 9743/10000 (97%)

Test set: Average loss: 0.0664, Accuracy: 9788/10000 (98%)

**Test set: Average loss: 0.0687, Accuracy: 9783/10000 (98%)**

Test set: Average loss: 0.0659, Accuracy: 9786/10000 (98%)

Test set: Average loss: 0.0568, Accuracy: 9814/10000 (98%)

Test set: Average loss: 0.0539, Accuracy: 9832/10000 (98%)

Test set: Average loss: 0.0546, Accuracy: 9823/10000 (98%)

Test set: Average loss: 0.0508, Accuracy: 9844/10000 (98%)

Test set: Average loss: 0.0538, Accuracy: 9818/10000 (98%)

Test set: Average loss: 0.0473, Accuracy: 9845/10000 (98%)

Test set: Average loss: 0.0449, Accuracy: 9846/10000 (98%)

Test set: Average loss: 0.0503, Accuracy: 9842/10000 (98%)

**Test set: Average loss: 0.0437, Accuracy: 9860/10000 (99%)**



Test set: Average loss: 0.0442, Accuracy: 9866/10000 (99%)

Test set: Average loss: 0.0504, Accuracy: 9850/10000 (98%)

Test set: Average loss: 0.0424, Accuracy: 9857/10000 (99%)

Test set: Average loss: 0.0429, Accuracy: 9861/10000 (99%)

Test set: Average loss: 0.0445, Accuracy: 9847/10000 (98%)

Test set: Average loss: 0.0453, Accuracy: 9851/10000 (99%)

Test set: Average loss: 0.0384, Accuracy: 9880/10000 (99%)

Test set: Average loss: 0.0416, Accuracy: 9872/10000 (99%)

Test set: Average loss: 0.0446, Accuracy: 9856/10000 (99%)

**Test set: Average loss: 0.0425, Accuracy: 9861/10000 (99%)**

Test set: Average loss: 0.0404, Accuracy: 9862/10000 (99%)

Test set: Average loss: 0.0352, Accuracy: 9879/10000 (99%)

Test set: Average loss: 0.0399, Accuracy: 9865/10000 (99%)

Test set: Average loss: 0.0379, Accuracy: 9884/10000 (99%)

Test set: Average loss: 0.0365, Accuracy: 9880/10000 (99%)

Test set: Average loss: 0.0395, Accuracy: 9882/10000 (99%)

Test set: Average loss: 0.0378, Accuracy: 9882/10000 (99%)

Test set: Average loss: 0.0378, Accuracy: 9876/10000 (99%)

Test set: Average loss: 0.0392, Accuracy: 9873/10000 (99%)

**Test set: Average loss: 0.0423, Accuracy: 9872/10000 (99%)**

Test set: Average loss: 0.0422, Accuracy: 9875/10000 (99%)

Test set: Average loss: 0.0402, Accuracy: 9877/10000 (99%)

Test set: Average loss: 0.0405, Accuracy: 9875/10000 (99%)

Test set: Average loss: 0.0411, Accuracy: 9873/10000 (99%)

Test set: Average loss: 0.0362, Accuracy: 9886/10000 (99%)

Test set: Average loss: 0.0425, Accuracy: 9887/10000 (99%)

Test set: Average loss: 0.0377, Accuracy: 9878/10000 (99%)

Test set: Average loss: 0.0390, Accuracy: 9872/10000 (99%)

Test set: Average loss: 0.0381, Accuracy: 9890/10000 (99%)

**Test set: Average loss: 0.0404, Accuracy: 9882/10000 (99%)**

the sparsity of model is 0.000

Epoch Running Time: -91.71920421123505

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Test set: Average loss: 2.3005, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3003, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.3001, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2998, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2994, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2987, Accuracy: 1135/10000 (11%)

**Test set: Average loss: 2.2975, Accuracy: 1135/10000 (11%)**

Test set: Average loss: 2.2951, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2887, Accuracy: 1135/10000 (11%)

Test set: Average loss: 2.2620, Accuracy: 3171/10000 (32%)

Test set: Average loss: 1.9701, Accuracy: 3744/10000 (37%)

Test set: Average loss: 1.0225, Accuracy: 6584/10000 (66%)

Test set: Average loss: 0.6280, Accuracy: 7983/10000 (80%)

Test set: Average loss: 0.5015, Accuracy: 8486/10000 (85%)

Test set: Average loss: 0.4265, Accuracy: 8711/10000 (87%)

Test set: Average loss: 0.3818, Accuracy: 8891/10000 (89%)

**Test set: Average loss: 0.3526, Accuracy: 8950/10000 (90%)**

Test set: Average loss: 0.3378, Accuracy: 8982/10000 (90%)

Test set: Average loss: 0.3166, Accuracy: 9048/10000 (90%)

Test set: Average loss: 0.2870, Accuracy: 9104/10000 (91%)

Test set: Average loss: 0.2600, Accuracy: 9210/10000 (92%)

Test set: Average loss: 0.2451, Accuracy: 9247/10000 (92%)

Test set: Average loss: 0.2462, Accuracy: 9262/10000 (93%)

Test set: Average loss: 0.2177, Accuracy: 9339/10000 (93%)

Test set: Average loss: 0.2074, Accuracy: 9396/10000 (94%)

Test set: Average loss: 0.2122, Accuracy: 9353/10000 (94%)

**Test set: Average loss: 0.2303, Accuracy: 9322/10000 (93%)**

Test set: Average loss: 0.1817, Accuracy: 9457/10000 (95%)

Test set: Average loss: 0.1853, Accuracy: 9440/10000 (94%)

Test set: Average loss: 0.1790, Accuracy: 9475/10000 (95%)

Test set: Average loss: 0.1692, Accuracy: 9491/10000 (95%)

Test set: Average loss: 0.1733, Accuracy: 9471/10000 (95%)

Test set: Average loss: 0.1656, Accuracy: 9490/10000 (95%)

Test set: Average loss: 0.1616, Accuracy: 9510/10000 (95%)

Test set: Average loss: 0.1672, Accuracy: 9485/10000 (95%)

Test set: Average loss: 0.1594, Accuracy: 9527/10000 (95%)

**Test set: Average loss: 0.1588, Accuracy: 9524/10000 (95%)**

Test set: Average loss: 0.1480, Accuracy: 9559/10000 (96%)

Test set: Average loss: 0.1447, Accuracy: 9574/10000 (96%)

Test set: Average loss: 0.1531, Accuracy: 9547/10000 (95%)

Test set: Average loss: 0.1491, Accuracy: 9547/10000 (95%)

Test set: Average loss: 0.1415, Accuracy: 9575/10000 (96%)

Test set: Average loss: 0.1501, Accuracy: 9539/10000 (95%)

Test set: Average loss: 0.1416, Accuracy: 9578/10000 (96%)

Test set: Average loss: 0.1494, Accuracy: 9516/10000 (95%)

Test set: Average loss: 0.1378, Accuracy: 9586/10000 (96%)

**Test set: Average loss: 0.1372, Accuracy: 9588/10000 (96%)**

the sparsity of model is 0.900

Epoch Running Time: -92.4021060705185

(base) anand.narasimhan@nbp-193-159 Deep Learning Project %