

RELU-RELU

Epoch 1/3
60000/60000 [=====] - 4s 64us/sample - loss: 0.2644 - accuracy: 0.9244

Epoch 2/3
60000/60000 [=====] - 4s 63us/sample - loss: 0.1093 - accuracy: 0.9662

Epoch 3/3
60000/60000 [=====] - 4s 65us/sample - loss: 0.0730 - accuracy: 0.9776

RELU-LeakyRELU

Epoch 1/3
60000/60000 [=====] - 4s 66us/sample - loss: 0.2701 - accuracy: 0.9197

Epoch 2/3
60000/60000 [=====] - 4s 67us/sample - loss: 0.1098 - accuracy: 0.9650

Epoch 3/3
60000/60000 [=====] - 4s 66us/sample - loss: 0.0740 - accuracy: 0.9768

RELU-SIGMOID

Epoch 1/3
60000/60000 [=====] - 4s 67us/sample - loss: 0.3412 - accuracy: 0.9035

Epoch 2/3
60000/60000 [=====] - 4s 67us/sample - loss: 0.1340 - accuracy: 0.9590

Epoch 3/3
60000/60000 [=====] - 4s 67us/sample - loss: 0.0895 - accuracy: 0.9725

RELU-SWISH

Epoch 1/3
60000/60000 [=====] - 4s 71us/sample - loss: 0.2687 - accuracy: 0.9211

Epoch 2/3
60000/60000 [=====] - 4s 72us/sample - loss: 0.1088 - accuracy: 0.9662

Epoch 3/3
60000/60000 [=====] - 4s 72us/sample - loss: 0.0743 - accuracy: 0.9763

RELU-TANH

Epoch 1/3
60000/60000 [=====] - 4s 72us/sample - loss: 0.2437 - accuracy: 0.9277

Epoch 2/3
60000/60000 [=====] - 4s 72us/sample - loss: 0.0985 - accuracy: 0.9693

Epoch 3/3
60000/60000 [=====] - 4s 72us/sample - loss: 0.0669 - accuracy: 0.9785

LeakyRELU-RELU

Epoch 1/3
60000/60000 [=====] - 4s 74us/sample - loss: 0.2769 - accuracy: 0.9180
Epoch 2/3
60000/60000 [=====] - 4s 75us/sample - loss: 0.1215 - accuracy: 0.9626
Epoch 3/3
60000/60000 [=====] - 5s 75us/sample - loss: 0.0853 - accuracy: 0.9729

LeakyRELU-LeakyRELU

Epoch 1/3
60000/60000 [=====] - 5s 78us/sample - loss: 0.2767 - accuracy: 0.9174
Epoch 2/3
60000/60000 [=====] - 5s 79us/sample - loss: 0.1270 - accuracy: 0.9613
Epoch 3/3
60000/60000 [=====] - 5s 79us/sample - loss: 0.0898 - accuracy: 0.9726

LeakyRELU-SIGMOID

Epoch 1/3
60000/60000 [=====] - 5s 82us/sample - loss: 0.3680 - accuracy: 0.8977
Epoch 2/3
60000/60000 [=====] - 5s 82us/sample - loss: 0.1646 - accuracy: 0.9502
Epoch 3/3
60000/60000 [=====] - 5s 82us/sample - loss: 0.1144 - accuracy: 0.9654

LeakyRELU-SWISH

Epoch 1/3
60000/60000 [=====] - 5s 86us/sample - loss: 0.2853 - accuracy: 0.9146
Epoch 2/3
60000/60000 [=====] - 5s 86us/sample - loss: 0.1280 - accuracy: 0.9609
Epoch 3/3

LeakyRELU-TANH

Epoch 1/3
60000/60000 [=====] - 5s 88us/sample - loss: 0.2729 - accuracy: 0.9197
Epoch 2/3
60000/60000 [=====] - 5s 89us/sample - loss: 0.1219 - accuracy: 0.9631
Epoch 3/3
60000/60000 [=====] - 5s 88us/sample - loss: 0.0854 - accuracy: 0.9734

SIGMOID-RELU

Epoch 1/3
60000/60000 [=====] - 5s 90us/sample - loss: 0.4305 - accuracy: 0.8781
Epoch 2/3
60000/60000 [=====] - 5s 90us/sample - loss: 0.2140 - accuracy: 0.9358
Epoch 3/3
60000/60000 [=====] - 5s 90us/sample - loss: 0.1574 - accuracy: 0.9523

SIGMOID-LeakyRELU

Epoch 1/3
60000/60000 [=====] - 6s 92us/sample - loss: 0.4182 - accuracy: 0.8804
Epoch 2/3
60000/60000 [=====] - 6s 93us/sample - loss: 0.2147 - accuracy: 0.9357
Epoch 3/3
60000/60000 [=====] - 6s 94us/sample - loss: 0.1572 - accuracy: 0.9525

SIGMOID-SIGMOID

Epoch 1/3
60000/60000 [=====] - 6s 97us/sample - loss: 0.5274 - accuracy: 0.8560
Epoch 2/3
60000/60000 [=====] - 6s 97us/sample - loss: 0.2225 - accuracy: 0.9337
Epoch 3/3
60000/60000 [=====] - 6s 98us/sample - loss: 0.1632 - accuracy: 0.9514

SIGMOID-SHISH

Epoch 1/3
60000/60000 [=====] - 6s 107us/sample - loss: 0.4226 - accuracy: 0.8772
Epoch 2/3
60000/60000 [=====] - 6s 104us/sample - loss: 0.2297 - accuracy: 0.9314
Epoch 3/3
60000/60000 [=====] - 6s 104us/sample - loss: 0.1686 - accuracy: 0.9494

SIGMOID-TANH

Epoch 1/3
60000/60000 [=====] - 6s 106us/sample - loss: 0.4135 - accuracy: 0.8816
Epoch 2/3
60000/60000 [=====] - 6s 107us/sample - loss: 0.2173 - accuracy: 0.9352
Epoch 3/3
60000/60000 [=====] - 6s 106us/sample - loss: 0.1599 - accuracy: 0.9518

SWISH-RELU

Epoch 1/3
60000/60000 [=====] - 7s 124us/sample - loss: 0.2794 - accuracy: 0.9183
Epoch 2/3
60000/60000 [=====] - 7s 115us/sample - loss: 0.1203 - accuracy: 0.9626
Epoch 3/3
60000/60000 [=====] - 7s 115us/sample - loss: 0.0810 - accuracy: 0.9746

SWISH-LeakyRELU

Epoch 1/3
60000/60000 [=====] - 7s 121us/sample - loss: 0.2912 - accuracy: 0.9145
Epoch 2/3
60000/60000 [=====] - 7s 121us/sample - loss: 0.1227 - accuracy: 0.9622
Epoch 3/3
60000/60000 [=====] - 7s 120us/sample - loss: 0.0827 - accuracy: 0.9741

SWISH-SIGMOID

Epoch 1/3
60000/60000 [=====] - 8s 128us/sample - loss: 0.3625 - accuracy: 0.8972
Epoch 2/3
60000/60000 [=====] - 8s 127us/sample - loss: 0.1613 - accuracy: 0.9513
Epoch 3/3
60000/60000 [=====] - 8s 126us/sample - loss: 0.1076 - accuracy: 0.9676

SWISH-SHISH

Epoch 1/3
60000/60000 [=====] - 8s 140us/sample - loss: 0.2935 - accuracy: 0.9134
Epoch 2/3
60000/60000 [=====] - 8s 140us/sample - loss: 0.1243 - accuracy: 0.9624
Epoch 3/3
60000/60000 [=====] - 8s 141us/sample - loss: 0.0838 - accuracy: 0.9736

SWISH-TANH

Epoch 1/3
60000/60000 [=====] - 9s 146us/sample - loss: 0.2938 - accuracy: 0.9139
Epoch 2/3
60000/60000 [=====] - 9s 145us/sample - loss: 0.1259 - accuracy: 0.9607
Epoch 3/3
60000/60000 [=====] - 9s 146us/sample - loss: 0.0841 - accuracy: 0.9733

TANH-RELU

60000 samples

Epoch 1/3

60000/60000 [=====] - 9s 146us/sample - loss: 0.2728 - accuracy: 0.9210

Epoch 2/3

60000/60000 [=====] - 9s 147us/sample - loss: 0.1257 - accuracy: 0.9606

Epoch 3/3

60000/60000 [=====] - 9s 146us/sample - loss: 0.0893 - accuracy: 0.9716

TANH-LeakyRELU

Epoch 1/3

60000/60000 [=====] - 9s 152us/sample - loss: 0.2982 - accuracy: 0.9119

Epoch 2/3

60000/60000 [=====] - 9s 149us/sample - loss: 0.1476 - accuracy: 0.9545

Epoch 3/3

60000/60000 [=====] - 9s 151us/sample - loss: 0.1041 - accuracy: 0.9677

TANH-SIGMOID

Epoch 1/3

60000/60000 [=====] - 9s 158us/sample - loss: 0.3576 - accuracy: 0.9014

Epoch 2/3

60000/60000 [=====] - 10s 174us/sample - loss: 0.1663 - accuracy: 0.9502

Epoch 3/3

60000/60000 [=====] - 10s 162us/sample - loss: 0.1128 - accuracy: 0.9655

TANH-SWISH

Epoch 1/3

60000/60000 [=====] - 12s 206us/sample - loss: 0.2850 - accuracy: 0.9156

Epoch 2/3

60000/60000 [=====] - 10s 166us/sample - loss: 0.1305 - accuracy: 0.9588

Epoch 3/3

60000/60000 [=====] - 10s 174us/sample - loss: 0.0914 - accuracy: 0.9711

TANH-TANH

Epoch 1/3

60000/60000 [=====] - 10s 167us/sample - loss: 0.3117 - accuracy: 0.9101

Epoch 2/3

60000/60000 [=====] - 10s 167us/sample - loss: 0.1629 - accuracy: 0.9512

Epoch 3/3

60000/60000 [=====] - 10s 166us/sample - loss: 0.1132 - accuracy: 0.9654

**MNIST Dataset 3Katman Modelin İlk 2Katman İçin Bazı Aktivasyon Fonksiyonlarının
Kombinasyonlarının Denenmesi
Ve Bu Kombinasyonların Performansı**

- Son katman aktivasyon fonksiyonu hepsinde: SOFTMAX.
- Optimizer: ADAM
- LOSS: sparse_categorical_crossentropy

2.L A.F 1.L AF	RELU	L-RELU	SIGMOID	SWISS	TANH
RELU	0.9776	0.9768	0.9725	0.9763	0.9785
L-RELU	0.9729	0.9726	0.9654	0.9609	0.9734
SIGMOID	0.9523	0.9525	0.9514	0.9494	0.9518
SWISS	0.9746	0.9741	0.9676	0.9736	0.9733
TANH	0.9716	0.9677	0.9655	0.9711	0.9654