

Proses Pelatihan

```
>> test2
pause
[aksi,targets] = test1;
[M,N] = size(aksi);
[L,N] = size(targets);
pause
F = 10;
net = newff(minmax(aksi),[F L],{'logsig' 'logsig'},'traingdx');
net.LW{2,1} = net.LW{2,1}*0.01;
net.b{2} = net.b{2}*0.01;
pause

net.performFcn = 'sse';
net.trainParam.goal = 0.001;
net.trainParam.show = 5;
net.trainParam.epochs = 1000;
net.trainParam.mc = 0.95;
P = aksi;
T = targets;
[net,tr] = train(net,P,T);

TRAINGDX, Epoch 0/1000, SSE 49.3015/0.001, Gradient 23.0529/1e-006

TRAINGDX, Epoch 5/1000, SSE 28.3421/0.001, Gradient 13.47/1e-006
TRAINGDX, Epoch 10/1000, SSE 18.208/0.001, Gradient 6.11052/1e-006
TRAINGDX, Epoch 15/1000, SSE 14.4759/0.001, Gradient 2.56141/1e-006
```

TRAINGDX, Epoch 20/1000, SSE 13.2925/0.001, Gradient 1.20456/1e-006
TRAINGDX, Epoch 25/1000, SSE 12.9615/0.001, Gradient 0.774426/1e-006
TRAINGDX, Epoch 30/1000, SSE 12.8931/0.001, Gradient 0.657767/1e-006
TRAINGDX, Epoch 35/1000, SSE 12.8938/0.001, Gradient 0.625009/1e-006
TRAINGDX, Epoch 40/1000, SSE 12.9025/0.001, Gradient 0.617594/1e-006
TRAINGDX, Epoch 45/1000, SSE 12.9007/0.001, Gradient 0.622493/1e-006
TRAINGDX, Epoch 50/1000, SSE 12.8801/0.001, Gradient 0.637757/1e-006
TRAINGDX, Epoch 55/1000, SSE 12.8327/0.001, Gradient 0.664954/1e-006
TRAINGDX, Epoch 60/1000, SSE 12.7481/0.001, Gradient 0.706671/1e-006
TRAINGDX, Epoch 65/1000, SSE 12.6095/0.001, Gradient 0.765172/1e-006
TRAINGDX, Epoch 70/1000, SSE 12.389/0.001, Gradient 0.836894/1e-006
TRAINGDX, Epoch 75/1000, SSE 12.0483/0.001, Gradient 0.890942/1e-006
TRAINGDX, Epoch 80/1000, SSE 11.5801/0.001, Gradient 0.83373/1e-006
TRAINGDX, Epoch 85/1000, SSE 11.1218/0.001, Gradient 0.820721/1e-006
TRAINGDX, Epoch 90/1000, SSE 10.6572/0.001, Gradient 1.04236/1e-006
TRAINGDX, Epoch 95/1000, SSE 9.91593/0.001, Gradient 0.813603/1e-006
TRAINGDX, Epoch 100/1000, SSE 9.07761/0.001, Gradient 0.804768/1e-006
TRAINGDX, Epoch 105/1000, SSE 8.09712/0.001, Gradient 0.785375/1e-006
TRAINGDX, Epoch 110/1000, SSE 7.02459/0.001, Gradient 0.728858/1e-006
TRAINGDX, Epoch 115/1000, SSE 5.87719/0.001, Gradient 0.69633/1e-006
TRAINGDX, Epoch 120/1000, SSE 4.65044/0.001, Gradient 0.617426/1e-006
TRAINGDX, Epoch 125/1000, SSE 3.4374/0.001, Gradient 0.586802/1e-006
TRAINGDX, Epoch 130/1000, SSE 2.31282/0.001, Gradient 0.41652/1e-006
TRAINGDX, Epoch 135/1000, SSE 1.37599/0.001, Gradient 0.349581/1e-006
TRAINGDX, Epoch 140/1000, SSE 0.690705/0.001, Gradient 0.212081/1e-006
TRAINGDX, Epoch 145/1000, SSE 0.31718/0.001, Gradient 0.107192/1e-006
TRAINGDX, Epoch 150/1000, SSE 0.149538/0.001, Gradient 0.0569182/1e-006
TRAINGDX, Epoch 155/1000, SSE 0.0785338/0.001, Gradient 0.0285297/1e-006

TRAINGDX, Epoch 160/1000, SSE 0.0471235/0.001, Gradient 0.018805/1e-006
TRAINGDX, Epoch 165/1000, SSE 0.0303942/0.001, Gradient 0.0107277/1e-006
TRAINGDX, Epoch 170/1000, SSE 0.0211179/0.001, Gradient 0.00733606/1e-006
TRAINGDX, Epoch 175/1000, SSE 0.015497/0.001, Gradient 0.0054781/1e-006
TRAINGDX, Epoch 180/1000, SSE 0.0117264/0.001, Gradient 0.0037979/1e-006
TRAINGDX, Epoch 185/1000, SSE 0.00916457/0.001, Gradient 0.00277883/1e-006
TRAINGDX, Epoch 190/1000, SSE 0.00735982/0.001, Gradient 0.00218459/1e-006
TRAINGDX, Epoch 195/1000, SSE 0.0060042/0.001, Gradient 0.00175252/1e-006
TRAINGDX, Epoch 200/1000, SSE 0.00493609/0.001, Gradient 0.00141637/1e-006
TRAINGDX, Epoch 205/1000, SSE 0.00407301/0.001, Gradient 0.00110449/1e-006
TRAINGDX, Epoch 210/1000, SSE 0.00338327/0.001, Gradient 0.000883335/1e-006
TRAINGDX, Epoch 215/1000, SSE 0.00282267/0.001, Gradient 0.000748942/1e-006
TRAINGDX, Epoch 220/1000, SSE 0.00234902/0.001, Gradient 0.000591715/1e-006
TRAINGDX, Epoch 225/1000, SSE 0.00195432/0.001, Gradient 0.000490676/1e-006
TRAINGDX, Epoch 230/1000, SSE 0.0016205/0.001, Gradient 0.000398203/1e-006
TRAINGDX, Epoch 235/1000, SSE 0.00133772/0.001, Gradient 0.000329806/1e-006
TRAINGDX, Epoch 240/1000, SSE 0.0010963/0.001, Gradient 0.000266791/1e-006
TRAINGDX, Epoch 243/1000, SSE 0.000969499/0.001, Gradient 0.000234834/1e-006
TRAINGDX, Performance goal met.

Pause
echo off

End of test2

Hasil Pelatihan Jaringan Saraf Tiruan

- **Bobot layer 1**

```
>> net.IW{1,1}
```

ans =

Columns 1 through 7

0	0	6.4035	1.4660	-4.7208	-6.1527	3.9970
0	0	-3.9142	3.2914	2.0921	3.3149	-8.9082
0	0	2.8371	7.0393	7.3848	0.9662	0.6887
0	0	-0.2607	2.4218	-4.9913	7.2128	-2.8267
0	0	5.6506	-6.0253	-3.7227	-0.2550	5.8216
0	0	4.8947	-0.5769	-6.4161	-3.3250	0.0463
0	0	-0.8193	5.9040	-4.7436	5.4000	5.0719
0	0	-7.2329	5.9260	1.1852	-0.9691	1.4745
0	0	4.9015	-1.8246	-2.3622	-3.2476	-4.5746
0	0	0.9458	6.1452	-4.9350	1.8847	-6.2378

Column 8

-4.3847
2.2960
-5.8867
-0.1923
-4.4415
4.2615
-2.2956

6.6849

4.6826

0.2425

- **Bias layer 1**

```
>> net.b{1,1}
```

ans =

-3.8617

4.9278

-6.8012

-0.0195

2.4488

0.7147

-5.2216

-3.3012

5.0279

-4.0100

- **Bobot layer 2**

```
>> net.LW{2,1}
```

```
ans =
```

```
Columns 1 through 7
```

```
8.0355 -6.9890 -4.5422 -1.5243 -0.8486 -1.3536 4.3247  
-3.7032 -0.5684 -6.9793 -2.1827 -8.1252 3.6000 6.2521  
0.2890 -0.3123 -5.3317 1.9492 -6.0975 1.3225 -3.8103  
-7.6831 -5.5635 -3.7636 -4.6827 2.9413 3.4641 -3.6035  
5.5388 -5.8826 -4.6124 -4.1436 1.4149 0.3124 -5.8229  
6.5123 3.0900 0.8386 -0.3059 1.1120 0.0910 -2.4480  
4.4301 -7.3963 6.4709 -1.5892 -3.3199 1.1407 4.1726  
-4.5099 6.8138 -3.9385 -0.2123 1.2282 2.1564 -6.4878  
-5.5363 -5.0968 -6.1861 4.2381 0.8632 1.5234 3.8802  
-1.1988 3.3460 -6.8538 -2.4578 -1.4051 -7.1173 -5.0261  
-0.9243 -0.6570 2.8532 0.6659 -7.1521 -2.7168 3.2861  
-1.7133 0.3756 5.2925 -6.1829 -5.2538 2.0426 -4.1972  
-3.2464 1.8688 1.8189 1.3043 -6.0085 -5.0247 -1.5271  
-3.2193 -3.1657 2.4428 -0.2876 5.6497 -5.2349 1.5839
```

Columns 8 through 10

8.6728	-3.6361	0.5018
3.2142	0.8505	-2.5148
0.1774	-0.7316	7.3683
5.3897	-0.3651	-1.7141
-4.9167	-0.0417	-0.9436
-7.6271	-4.5367	7.7368
-5.0314	-0.2551	-1.4301
-8.2026	-0.5219	-2.0562
-4.4897	0.0861	-1.3818
3.1721	-2.0769	-1.4255
4.2796	-5.8103	-0.8371
0.2827	0.6834	-0.1046
-7.0972	3.0011	3.0724
-4.5545	-6.1132	-1.2236

- **Bias layer 2**

```
>> net.b{2,1}
```

```
ans =
```

```
-7.7888
```

```
-6.0915
```

```
-2.8532
```

```
-4.7110
```

```
-0.8201
```

```
-7.5039
```

```
-6.4889
```

```
-3.3018
```

```
-3.9495
```

```
1.8106
```

```
-4.3756
```

```
-2.8797
```

```
-2.2306
```

```
-0.8141
```


Pengujian Algoritma

```
>> Y = sim (net,P)
```

```
Y =
```

```
Columns 1 through 7
```

```
0.9943 0.0031 0.0001 0.0034 0.0036 0.0000 0.0029  
0.0032 0.9945 0.0031 0.0021 0.0000 0.0000 0.0000  
0.0000 0.0029 0.9954 0.0002 0.0003 0.0030 0.0000  
0.0012 0.0020 0.0000 0.9940 0.0044 0.0000 0.0000  
0.0019 0.0000 0.0000 0.0039 0.9935 0.0000 0.0038  
0.0000 0.0000 0.0029 0.0000 0.0032 0.9945 0.0028  
0.0024 0.0000 0.0000 0.0000 0.0049 0.0020 0.9939  
0.0000 0.0000 0.0011 0.0003 0.0045 0.0007 0.0000  
0.0005 0.0021 0.0000 0.0018 0.0014 0.0000 0.0003  
0.0000 0.0007 0.0021 0.0038 0.0001 0.0000 0.0000  
0.0000 0.0019 0.0000 0.0000 0.0000 0.0000 0.0000  
0.0000 0.0016 0.0020 0.0036 0.0007 0.0002 0.0003  
0.0000 0.0000 0.0016 0.0000 0.0000 0.0029 0.0000  
0.0000 0.0000 0.0000 0.0000 0.0001 0.0000 0.0026
```

Columns 8 through 14

0.0000	0.0000	0.0004	0.0004	0.0000	0.0000	0.0000
0.0000	0.0018	0.0011	0.0031	0.0011	0.0000	0.0000
0.0007	0.0001	0.0021	0.0000	0.0016	0.0013	0.0000
0.0010	0.0009	0.0038	0.0000	0.0016	0.0000	0.0000
0.0029	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
0.0011	0.0000	0.0000	0.0000	0.0000	0.0036	0.0013
0.0000	0.0005	0.0000	0.0001	0.0000	0.0004	0.0038
0.9940	0.0021	0.0040	0.0000	0.0008	0.0021	0.0002
0.0033	0.9956	0.0000	0.0000	0.0000	0.0001	0.0026
0.0013	0.0000	0.9938	0.0040	0.0004	0.0000	0.0000
0.0000	0.0000	0.0038	0.9947	0.0014	0.0021	0.0034
0.0005	0.0000	0.0012	0.0018	0.9950	0.0024	0.0000
0.0003	0.0000	0.0001	0.0028	0.0013	0.9945	0.0033
0.0000	0.0028	0.0003	0.0044	0.0000	0.0015	0.9944

