

Warning: Training stopped at iteration 678 because training loss is NaN. Predictions using the output network might contain NaN values.

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Iter	Eval	Objective	Objective	BestSoFar	BestSoFar	SectionDepth	InitialLearn-	Momentum	
L2Regulariza-									
	result		runtime	(observed)	(estim.)		Rate		
tion									
=====									
1	Best	0.848	34.973	0.848	0.848	3	0.71501	0.86017	
0.0084489									
2	Accept	0.848	95.384	0.848	0.848	1	0.10281	0.87562	
1.741e-05									
3	Accept	0.848	170.66	0.848	0.848	3	0.019656	0.81089	
3.7567e-08									

Warning: Training stopped at iteration 2390 because training loss is NaN. Predictions using the output network might contain NaN values.

4	Accept	0.848	39.851	0.848	0.848	2	0.25803	0.94448	
2.9357e-09									
5	Best	0.762	93.188	0.762	0.77503	1	0.38583	0.88062	
0.0025642									
6	Accept	0.788	95.701	0.762	0.76327	1	0.38278	0.86569	
0.001919									
7	Accept	0.8	93.169	0.762	0.78487	1	0.41121	0.88101	
0.003222									
8	Accept	0.8	94.025	0.762	0.77971	1	0.37541	0.84261	
0.00078267									

Warning: Training stopped at iteration 3139 because training loss is NaN. Predictions using the output network might contain NaN values.

9	Accept	0.802	35.593	0.762	0.78194	1	0.38042	0.90307	
4.5643e-09									

Warning: Training stopped at iteration 2259 because training loss is NaN. Predictions using the output network might

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contain NaN
values.
| 10 | Accept | 0.848 | 27.75 | 0.762 | 0.79765 | 1 | 0.38805 | 0.90225✓
| 0.0071539 |
| 11 | Accept | 0.762 | 93.563 | 0.762 | 0.77877 | 1 | 0.38184 | 0.86646✓
| 8.7548e-06 |
| 12 | Accept | 0.848 | 92.994 | 0.762 | 0.80543 | 1 | 0.37447 | 0.87734✓
| 4.943e-07 |
| 13 | Accept | 0.788 | 94.6 | 0.762 | 0.80467 | 1 | 0.61784 | 0.82674✓
| 7.4122e-10 |
| 14 | Best | 0.042 | 137.92 | 0.042 | 0.050715 | 2 | 0.010158 | 0.8027✓
| 0.0027353 |
| 15 | Accept | 0.068 | 138.66 | 0.042 | 0.05854 | 2 | 0.010016 | 0.9054✓
| 4.0043e-09 |
| 16 | Accept | 0.096 | 138.09 | 0.042 | 0.071149 | 2 | 0.010014 | 0.87296✓
| 1.5128e-06 |
| 17 | Accept | 0.14 | 137.48 | 0.042 | 0.071799 | 2 | 0.015256 | 0.94907✓
| 1.19e-08 |
| 18 | Best | 0.014 | 142.67 | 0.014 | 0.058287 | 2 | 0.010027 | 0.84776✓
| 4.8475e-08 |
Warning: Training stopped at iteration 233 because training loss is NaN. Predictions using the output network might
contain NaN
values.
| 19 | Accept | 1 | 7.0682 | 0.014 | 0.058117 | 2 | 0.96727 | 0.91497✓
| 0.0021471 |
| 20 | Accept | 0.762 | 1016.2 | 0.014 | 0.05816 | 3 | 0.21209 | 0.91586✓
| 0.0085678 |
| =====✓
=====|
| Iter | Eval | Objective | runtime | (observed) | (estim.) | Rate | Momentum✓
| L2Regulariza-
| | result | | | | | |
| tion |
| =====✓
=====|
| 21 | Accept | 0.03 | 93.56 | 0.014 | 0.055988 | 1 | 0.01016 | 0.91561✓
```

```
| 0.0035807 |
| 22 | Accept | 0.05 | 92.338 | 0.014 | 0.055988 | 1 | 0.010003 | 0.93135✓
| 1.5387e-10 |
| 23 | Best | 0 | 90.79 | 0 | 0.026945 | 1 | 0.010024 | 0.93099✓
| 6.9483e-07 |
| 24 | Accept | 0.102 | 94.627 | 0 | 0.045633 | 1 | 0.010067 | 0.93749✓
| 0.00038849 |
| 25 | Accept | 0.848 | 143.48 | 0 | 0.045458 | 2 | 0.09777 | 0.90941✓
| 0.0012398 |
Warning: Training stopped at iteration 494 because training loss is NaN. Predictions using the output network might
contain NaN
values.
| 26 | Accept | 1 | 11.416 | 0 | 0.045561 | 2 | 0.58858 | 0.92134✓
| 0.0011423 |
Warning: Training stopped at iteration 250 because training loss is NaN. Predictions using the output network might
contain NaN
values.
| 27 | Accept | 1 | 5.9026 | 0 | 0.043577 | 1 | 0.97719 | 0.92533✓
| 0.0067656 |
| 28 | Accept | 0.038 | 93.173 | 0 | 0.044486 | 1 | 0.010435 | 0.80697✓
| 2.1561e-10 |
| 29 | Accept | 0.008 | 92.183 | 0 | 0.037237 | 1 | 0.014499 | 0.93001✓
| 0.00035867 |
| 30 | Accept | 0.848 | 91.436 | 0 | 0.0723 | 1 | 0.013848 | 0.93372✓
| 0.0087661 |
```

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```
Optimization completed.
MaxObjectiveEvaluations of 30 reached.
Total function evaluations: 30
Total elapsed time: 3601.127 seconds
Total objective function evaluation time: 3588.477
```

Best observed feasible point:

SectionDepth	InitialLearnRate	Momentum	L2Regularization

```
1          0.010024      0.93099      6.9483e-07

Observed objective function value = 0
Estimated objective function value = 0.073454
Function evaluation time = 90.7902

Best estimated feasible point (according to models):
SectionDepth  InitialLearnRate  Momentum  L2Regularization
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1          0.010003      0.93135      1.5387e-10
```

```
Estimated objective function value = 0.0723
Estimated function evaluation time = 92.3035
```

```
acc_25dB =
```

```
0.9976
```

```
acc_20dB =
```

```
0.9578
```

```
acc_15dB =
```

```
0.7764
```

```
acc_10dB =
```

```
0.5376
```

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